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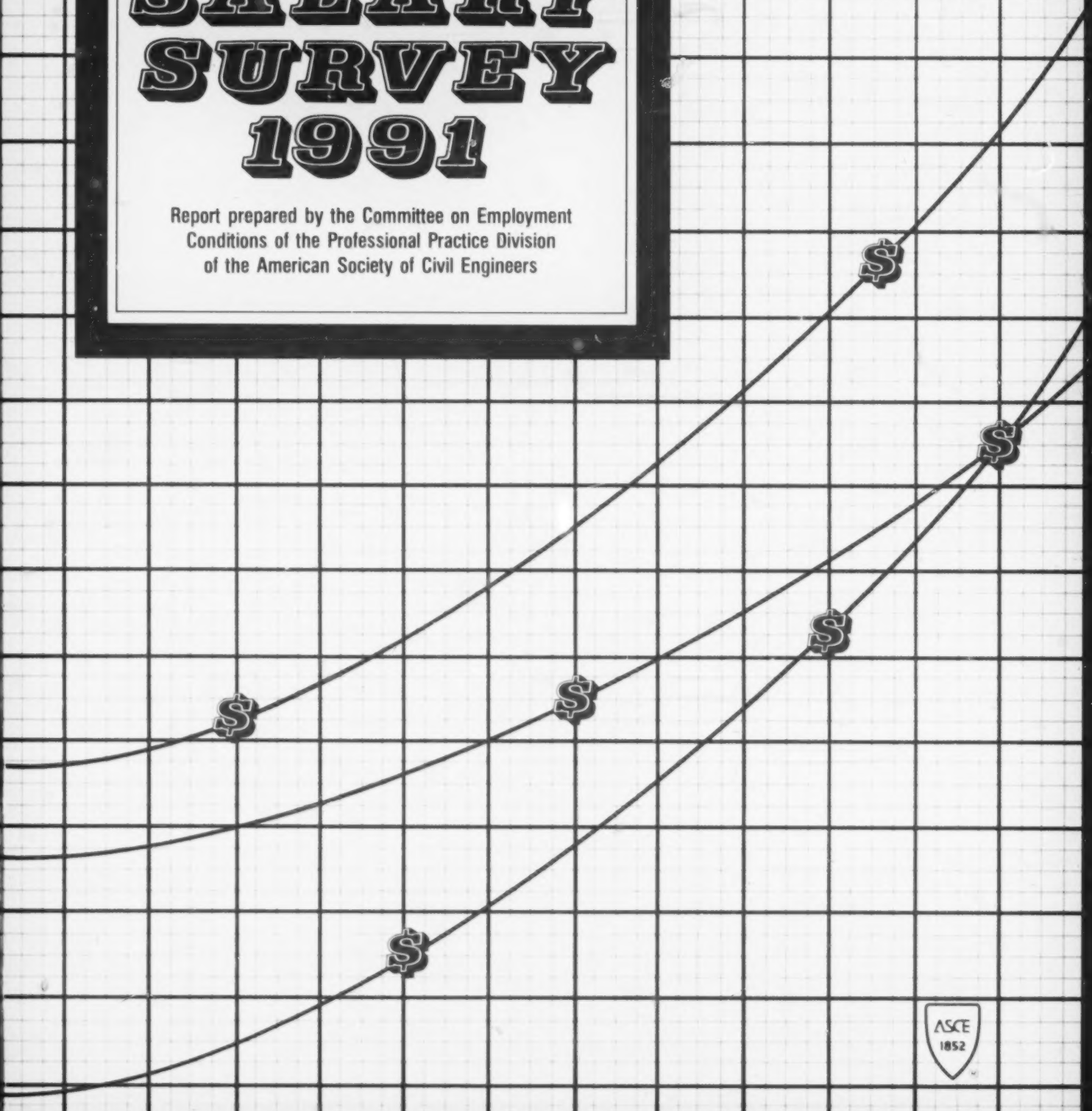
ASCE SALARY SURVEY 1991

Report prepared by the Committee on Employment Conditions of the Professional Practice Division of the American Society of Civil Engineers



ASCE 1852

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Published by the
American Society of Civil Engineers
345 East 47th Street
New York, New York 10017-2398

ABSTRACT

The 21st biennial ASCE salary survey of the engineering profession conducted by the ASCE Committee on Employment Conditions during the first half of 1991 is presented. It consists of an in-depth analysis of salary and benefits data based on the different ASCE professional grades and six broad categories of employment: 1) Consulting firms; 2) construction firms; 3) design/construction firms; 4) industry, railroads, and utilities; 5) state departments and agencies; and 6) municipalities and counties. Some of the various analyses offered in the survey cover such topics as: 1) Costs of fringe benefits by employment categories and trends in this area; 2) regional comparisons of median salaries by professional grades; 3) mean and median salaries for selected metropolitan areas; 4) average salaries by employment categories; and 5) percentage change in mean entrance and average salaries. This survey provides a comprehensive look at the topic of compensation for services within the engineering profession.

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ISBN 0-87262-882-5
ISSN 1060-121 X
Manufactured in the United States of America

ASCE 1991 Salary Survey

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PREFACE

ASCE is pleased to present this 21st Biennial Salary Survey. The survey analyzes salary and benefits data as of June 1991, and provides salary ranges according to region, ASCE professional grades I through IX, and six broad categories of employment.

Information on metropolitan areas should be especially useful to firms planning to establish new offices and/or relocate staff. Of special note is the fact that some new cities have been added to the metropolitan area analysis, perhaps indicating a demographic trend. Results of the most recent ASCE Salary Index, a semi-annual measure of salary trends in major cities, are included as an appendix.

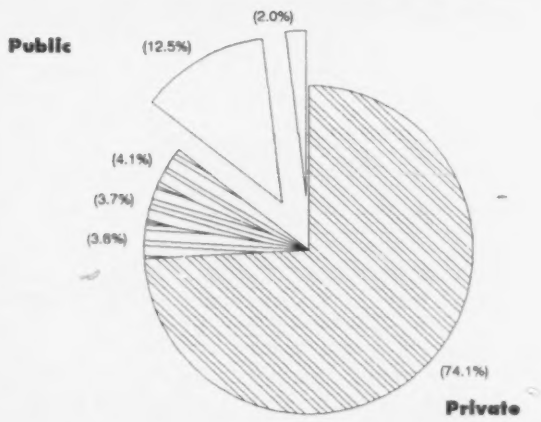
The Committee on Employment Conditions and the Professional Activities staff would be most interested to learn how personnel administrators make use of these data; which reports or tables, if any, are not particularly useful; and what additional information or enhancements would be desirable. If you have comments or suggestions to offer for future surveys, please address them to:

ASCE Salary Survey
345 East 47th Street
New York, NY 10017

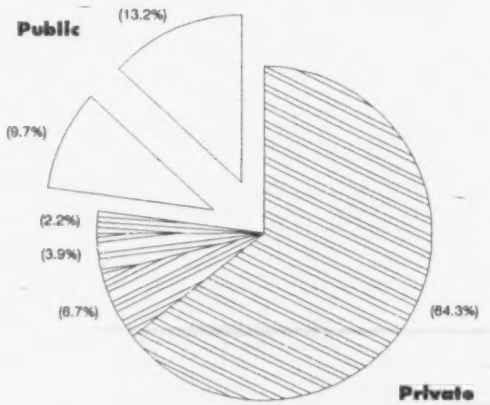
TABLE 1- Number of Responses by Employment Category

Employment Category	Number of Organizations	Number of Individuals
Private Employer		
Consulting Firms	840	15,835
Construction Firms	42	532
Design/Construct Firms	41	1,658
Industry, Railroad or Utility	46	957
Subtotal	969	18,982
Public Employer		
State Dept. or Agency	23	3,255
Municipality or County	141	2,387
Subtotal	164	5,642
TOTAL	1,133	24,624

Number of Employers Responding



Number of Employees Represented



ASCE 1991 SALARY SURVEY

By the Committee on Employment Conditions
and Professional Activities Staff

INTRODUCTION

ASCE has published periodic salary surveys since 1914, when its first known salary survey was conducted. The Society continued to conduct surveys at varying intervals until 1950, when the survey became a scheduled biennial project. This report is the 21st ASCE Salary Survey in this biennial series. The Committee on Employment Conditions (COEC) has been charged with conducting salary surveys since it was established in 1971.

Salary survey questionnaires are sent to employers during odd-numbered years, and the data collected represent, therefore, salary and benefit conditions as of that period. For 1991, salary data were collected and analyzed based on ASCE professional grades for six employment categories: consulting firms; construction firms; design-construct firms; industry, railroad and utility; state department and agency; and for municipality and county. Federal agencies were not surveyed since most federal salaries and benefits are standardized by the U.S. Office of Personnel Management and are a matter of public record.

The request for an average annual salary for each grade, in addition to entrance and maximum salaries, was added to the Salary Survey questionnaire in 1985. The inclusion of these data made possible the calculation of a middle 50% range and a 95% range for the average annual salary. The mean (average) and median (middle) salaries for entrance and maximum rates are retained for comparisons with past surveys.

SUMMARY OF FINDINGS

This summary presents some of the more important data and analyses developed from this survey.

The 1991 Salary Survey is based on responses from 1,133 organizations representing 24,624 employees, as tabulated in Table 1. By comparison, the 1989 survey included 772 firms representing 21,255 employees. The number of responses increased 47% for firms and 14% for employees. Total responses by state and region are shown on page 9.

In the two-year period since the 1989 survey, the average combined median entrance salary for all grades increased almost 6.4% to $44,670. This statistic is computed from the average of median entrance salaries for each professional grade from I/II through IX and is a good trend indicator. Additional data on entrance salaries for all grades are presented in Tables 2 through 4. The average median entrance salaries and the percent change from 1989 are shown by employment category in Table 2. A trend analysis, by employment categories, of average median entrance salaries for all grades over an eight-year period (1983-1991) is shown in Table 3. Starting salaries for those entering the profession in ASCE professional grades I/II for each of the employment categories are shown in Table 4. The average entrance salary is $27,067, a 10.3% increase over 1989.

TABLE 2 -- Percent Increase of Averaged Median Entrance Salaries by Employment Category for All Grades

EMPLOYMENT CATEGORY	Average Median Entrance Salary in Dollars, for 1991	Percent Increase Over 1989
Consulting Firms	$45,278	7.2
Construction Firms	$45,044	2.1
Design/Construct Firms	$47,006	13.2
Industry, Railroad or Utility	$48,253	11.7
State Department or Agency	$40,399	5.2
Municipality or County	$42,042	3.3

A survey of benefits revealed a change in the recent trend of increasing fringe benefits. The overall cost of fringe benefits as a percentage of the base payroll was reported to be 30.25 for 1991, as compared to 37.35% for 1989, 33.81% for 1987, and 32.68% in 1985. Table 5 shows the trend in fringe benefits for the decade. A report of benefit costs by employment categories is shown in Table 6.

Regional comparisons of median salaries by professional grades are included. The national average median starting salary (grades I/II), irrespective of employment category, was $26,000. A breakdown by region of this average for each grade can be found in Table 8. Mean and median salaries for selected metropolitan areas throughout the United States are given in Table 11.

Additional analyses for each grade by employment category are given in Tables 12 through 18 and include: median and mean entrance and maximum salaries; mean average salaries; percent change in mean entrance and average salaries since 1989; standard deviations and middle 50% and 95% ranges for mean average salaries.

GENERAL BACKGROUND

Sampling Procedure

As in previous surveys, the data presented in this report were obtained from representative sources on a sampling basis. Questionnaires were mailed to approximately 11,000 employers of civil engineers. See Appendix 1 for a copy of the questionnaire. A 10.5% return was achieved. Responses are not necessarily uniform or representative of the entire profession. Some regional responses may be statistically invalid. Overall, median salary data obtained in this manner for previous ASCE Salary Surveys have correlated well with median salary information provided by a large sample of ASCE members responding to the Society's periodic "Survey of the Profession." The data in this survey report are solely indicators of salary and benefits at the time the survey was conducted, and should not be considered as recommended salary and benefits levels.

Professional Grade Descriptions

ASCE's Professional Grade Descriptions, rather than years of experience, were used as the basis for comparison of salaries in the survey. These relate salaries to expertise or level of responsibility rather than longevity. The grade descriptions, revised in 1975 by ASCE's COEC and the National Society of Professional Engineers' (NSPE) Professional Employment Committee, have been used by ASCE for this purpose for many years. Therefore, the system is compatible with NSPE classifications and correlates with federal "G.S." grades, thus making the survey's data comparable to NSPE surveys and the U.S. Department of Labor's Bureau of Labor Statistics information. See Appendix 2 for further information on Professional Grade Descriptions.

COMMENTS ON DATA, ANALYSIS, AND PRESENTATION

The data contained in this survey are presented in two modes. For historical comparisons the mean (average) entrance salaries are compared with earlier (1989) survey results (Tables 12-18) and median salaries are used for longer term (1983-1991) trend comparisons (Figures 2-8). Calculation of a change from the 1989-1991 mean as a percentage relates the current salary data to the most recent previous salary survey. This calculation is determined only for the entrance and average salary rates. The writers felt that a calculation of the change in the maximum rate would not be meaningful.

Average annual salaries enable a statistical determination of the distribution of the average salary within any job classification or employment category. This distribution is described in terms of the middle 50% range (mean of the average annual salary +/-0.675 standard deviations) and the 95% range (mean of the average annual salary +/-2 standard deviations). The 95% range may not be meaningful in certain higher grade classifications, because it is possible that misinterpretation of the grade descriptions may have produced data that skewed the results and generated a disproportionately large standard deviation for the relatively small sample population. Where the writers feel this is the case, the calculated "spread" is replaced by a "*".

Salary Trends

In Table 3, the trend of the biennial percent changes of the average median entrance salaries tends to fluctuate with the demands on the design and construction industry. Although the 1985 data were not analyzed for the categories of industry, railroad and utility; state department and agency; or of municipality and county, the combined four-year period of analysis appears to be consistent with the individual two-year periods used for the other three categories (consulting, construction, and design-construct).

TABLE 3 - Percent Increase of Averaged Median Salaries by Employment Category Between 1983 and 1991 for All Grades					
Employment Category	Percent Increase of Averaged Median Entrance Salary Over Prior Report Period				Total Percent of Increase
	1983-1985	1985-1987	1987-1989	1989-1991	1983-1991
Consulting Firms	8.9	7.2	8.4	7.2	34.6
Construction Firms	3.2	38.2	12.1	2.1	28.0
Design/Construct Firms	11.4	3.7	4.2	13.2	36.2
Industry, Railroad or Utility	(a)	15.7(b)	10.3	11.7	40.0
State Dept. or Agency	(a)	24.8(b)	10.6	5.2	44.8
Municipality or County	(a)	18.1(b)	9.0	3.3	32.9

(a) Data not available
(b) Four-year period, 1983-1987

TABLE 4 -- 1991 Entrance Salaries Grade I/II					
Employment Category	Mean Entrance Salary in Dollars	Range of Entrance Salaries in Dollars		Median Entrance Salary in Dollars	Percent Change in Median Salary Over 1989
		Low	High		
Consulting Firms	25,663	12,000	43,500	25,600	10.0
Construction Firms	25,655	20,000	30,000	25,250	-2.1
Design/Construct Firms	27,343	16,600	33,300	27,000	16.9
Industry, Railroad or Utility	29,614	21,000	42,000	29,100	3.9
State Department or Agency	25,612	20,050	31,812	25,300	2.9
Municipality or County	28,513	16,832	43,815	28,280	6.4

TABLE 5 - Average Overall Benefit Cost as a Percent of Base Payroll for the Decade 1981-1991						
YEAR	1981	1983	1985	1987	1989	1991
Percent of Base Payroll	38.94	34.30	32.68	33.81	37.35	30.25

Benefits

Table 5 shows that the overall benefit cost as a percentage of base payroll appears to have dropped in the last two years. The Committee on Employment Conditions would welcome input from readers as to likely explanations for this changing trend. Among the possibilities the committee identified are the following:

- Some employers have increased the employee contribution to benefits plans, thus holding the line on the costs of providing these benefits while continuing to increase salaries.
- Cafeteria plans are becoming increasingly popular.
- More smaller firms responded to this survey than in previous years.

Although social security, unemployment and workers' compensation are taxes or insurance required by law, not optional benefits, they have historically been included on the list of fringe benefits. Of the 1,133 employers responding to the survey, 1,125 completed the section discussing benefits. Table 7 includes the number of employers who reported that they offer any given benefit.

TABLE 6 - Average Fringe Benefit Cost as a Percent of Base Payroll by Employment Category				
	Fringe Benefit Cost as a Percentage of Base Payroll			
Employment Category	1985	1987	1989	1991
Consulting Firms	32.9	33.0	36.4	29.4
Construction Firms	32.0	38.9	39.8	25.6
Design/Construct Firms	29.0	31.8	45.2	28.1
Industry, Railroad or Utility	--	35.0	36.7	35.4
State Dept. or Agency	--	31.6	36.5	33.6
Municipality or County	--	36.2	37.7	34.9

TABLE 7 - Various Benefits Offered by Employers in All Employment Categories

BENEFIT	Number of Employers Offering	% of Total Responding
Overtime	516	45.9%
Vacation	1092	97.1%
Holidays	1094	97.2%
Sick Leave	1052	93.5%
Military Leave/Jury Duty	929	82.6%
Retirement Income, Deferred Profit Sharing (ESOP, SRP, TRASOP, 401K, etc.)	845	75.1%
Social Security, Unemployment and Workers' Compensation Taxes	1082	96.2%
Professional Dues, Licenses and Meetings	1013	90.0%
Insurance: Medical	1074	95.5%
Insurance: Life, Disability	964	85.7%
Insurance: Dental, Audio/Visual	671	59.6%
Education Allowance	774	68.8%
Separation Allowance	334	29.7%
Vehicle, parking allowance	478	42.5%
Child Care	65	5.8%
Employee Assistance Program (counseling, legal advice)	300	26.7%

(a) Of the 1,133 employers, 1,125 provided information about Fringe Benefits in 1991

Table 8 - Number of Responses by Region

State	Firms	Employees
REGION I - *New England*		
Connecticut	15	195
Maine	10	128
Massachusetts	22	751
New Hampshire	6	78
Rhode Island	1	6
Vermont	3	81
Region Totals:	57	1239
REGION II - *Middle Atlantic*		
Delaware	2	8
Maryland	26	808
New Jersey	30	534
New York	54	1427
Pennsylvania	37	1274
Washington, DC	7	171
Region Totals:	156	4222
REGION III - *Middle West*		
Illinois	41	744
Indiana	13	113
Iowa	8	255
Michigan	32	383
Minnesota	16	178
Missouri	18	1017
Ohio	31	422
Wisconsin	26	765
Region Totals:	185	3877
REGION IV - *South*		
Alabama	7	54
Arkansas	3	3
Florida	62	1485
Georgia	25	985
Kentucky	11	454
Louisiana	23	207

State	Firms	Employees
REGION IV Continued		
Mississippi	3	15
North Carolina	27	652
South Carolina	8	247
Tennessee	25	732
Virginia	23	227
West Virginia	2	4
Region Totals:	219	5065
REGION V - *West*		
Colorado	39	523
Kansas	15	125
Montana	2	2
Nebraska	6	66
New Mexico	6	114
North Dakota	2	6
Oklahoma	12	122
South Dakota	1	2
Texas	79	2318
Wyoming	3	29
Region Totals:	165	3307
REGION VI - *Far West*		
Alaska	4	46
Arizona	22	427
California	225	5493
Hawaii	12	105
Idaho	5	42
Nevada	11	89
Oregon	13	82
Utah	10	63
Washington	37	497
Region Totals:	339	6844
FOREIGN/OTHER		
Foreign	1	5
Anonymous	7	54
Puerto Rico	3	11
Region Totals:	11	70

Regional Analysis

Overall median salaries are presented on a regional basis in Table 9. The regions are listed in Figure 1. At all ASCE Grade Levels except IX, the Far Western Region represents the highest median salary values. In the case of Grade Level IX, New England was the highest.

A new feature which started with last year's survey was the inclusion of median and mean salaries for major metropolitan areas, as shown in Table 10. Middle 50% ranges are also included but should be used with care because of the small sampling they represent in several cases.

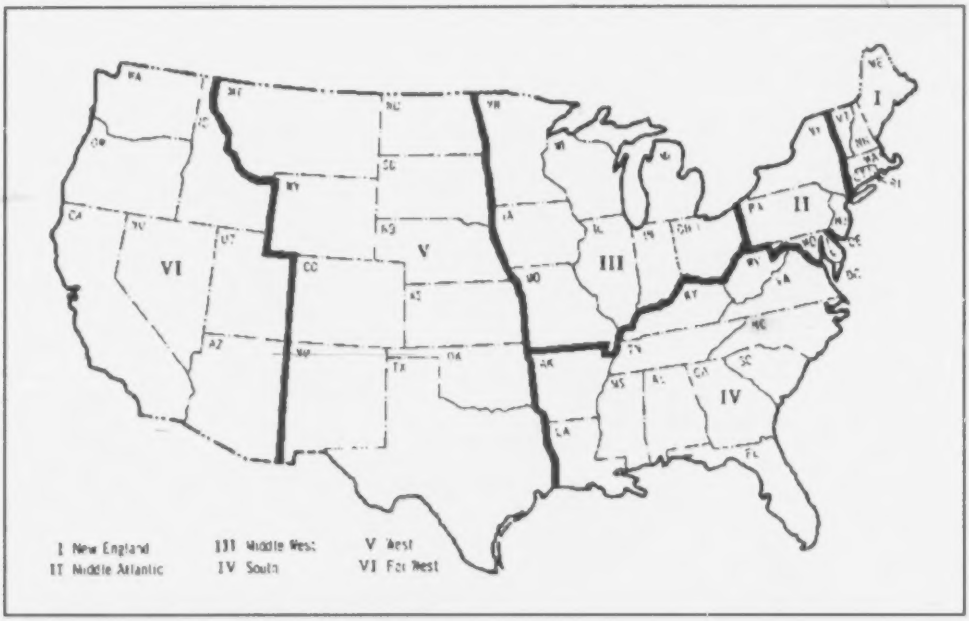


FIGURE 1 - Map of Regions Used for Comparative Purposes

TABLE 9 -- Regional Relationship (Ratio of Regional to National Entrance Salary Medians for Combined Employment Categories in Each ASCE Grade)

ASCE Grade	I/II	III	IV	V	VI	VII	VIII	IX
New England	25,000 .96	30,744 1.00	34,152 .98	40,000 .99	44,500 .97	51,000 .98	60,000 1.00	73,200 1.05
Middle Atlantic	26,000 1.00	30,600 1.00	35,000 1.00	42,560 1.05	48,150 1.05	53,700 1.03	63,550 1.06	71,400 1.02
Middle West	25,200 .97	29,869 .97	33,717 .96	37,584 .93	42,000 .92	47,700 .92	54,185 .90	64,900 .93
South	25,296 .97	29,700 .97	34,860 1.00	40,000 .99	42,773 .93	50,000 .96	54,400 .91	65,500 .94
West	25,740 .99	29,700 .97	34,152 .98	39,000 .97	45,000 .98	50,000 .96	54,000 .90	64,900 .93
Far West	28,000 1.08	34,100 1.11	39,850 1.14	46,682 1.16	51,000 1.11	58,406 1.12	65,000 1.08	72,000 1.03
Overall Median	26,000	30,744	35,000	40,400	45,775	52,000	60,000	70,000

TABLE 10 - Average Salary Rates and Ranges for Selected Metropolitan Areas

MIDDLE ATLANTIC REGION

NEW YORK			AVERAGE SALARY RATES				
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	35	304	32,100	31,407	4,019	28,694	34,120
III	36	274	38,980	38,957	5,530	35,224	42,690
IV	33	245	44,200	46,654	8,957	40,608	52,700
V	37	227	52,000	52,735	7,794	47,474	57,996
VI	34	185	60,000	62,759	10,345	55,776	69,742
VII	30	154	67,480	68,287	8,522	62,535	74,039
VIII	31	102	80,000	83,155	19,612	69,917	96,393
IX	22	55	103,150	105,601	20,588	91,704	119,498

WASHINGTON, DC			AVERAGE SALARY RATES				
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	14	94	31,200	31,307	4,661	28,161	34,453
III	14	111	35,150	35,269	5,862	31,312	39,226
IV	12	88	42,600	42,935	6,110	38,811	47,059
V	13	87	53,400	51,539	9,649	45,026	58,052
VI	11	63	61,700	62,921	15,087	52,737	73,105
VII	13	50	61,100	67,672	12,563	59,192	76,152
VIII	8	28	73,150	72,977	6,982	68,264	77,690
IX	6	9	98,000	95,874	15,975	85,041	106,657

MIDDLE ATLANTIC REGION

BALTIMORE	AVERAGE SALARY RATES						
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	6	40	27,570	25,034	4,535	21,973	28,095
III	5	64	30,996	29,416	3,299	27,189	31,643
IV	10	62	34,030	35,000	5,258	31,451	38,549
V	7	66	42,000	41,123	3,636	38,669	43,577
VI	10	73	50,981	50,110	7,766	44,868	55,352
VII	6	59	61,609	59,991	8,907	53,979	66,003
VIII	5	26	70,000	67,828	10,641	60,645	75,011
IX	8	36	77,965	78,633	10,430	71,593	85,673

PHILADELPHIA	AVERAGE SALARY RATES						
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	11	190	28,500	28,407	3,274	26,197	30,617
III	11	120	35,500	35,965	5,947	31,951	39,979
IV	13	139	41,000	41,421	8,026	36,003	46,839
V	10	136	53,000	53,091	6,235	48,882	57,300
VI	8	103	57,500	59,487	9,797	52,874	66,100
VII	4	41	70,300	65,025	15,362	54,656	75,394
VIII	9	48	83,000	80,530	12,059	72,390	88,670
IX	5	13	90,000	94,287	22,769	78,918	109,656

MIDDLE ATLANTIC REGION

PITTSBURGH			AVERAGE SALARY RATES				
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	6	36	27,750	28,542	1,998	27,193	29,891
III	6	36	32,163	32,490	2,899	30,533	34,447
IV	6	48	38,300	38,895	3,026	36,852	40,938
V	6	39	45,242	44,671	4,579	41,580	47,762
VI	5	44	55,341	51,376	5,438	47,705	55,047
VII	9	53	57,000	58,946	8,406	53,272	64,620
VIII	5	16	68,000	68,585	2,784	66,706	70,464
IX	6	19	82,168	81,361	8,111	75,886	86,836

NEW ENGLAND REGION

BOSTON			AVERAGE SALARY RATES				
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	10	52	30,700	30,279	6,502	25,890	34,668
III	12	52	40,100	41,511	7,373	36,534	46,488
IV	11	153	45,000	46,863	10,877	39,521	54,205
V	12	82	58,500	58,790	12,415	50,410	67,170
VI	10	45	60,982	66,751	14,791	56,767	76,735
VII	8	20	73,000	75,257	13,956	65,837	84,677
VIII	8	34	72,650	77,909	14,206	68,320	87,498
IX	5	6	83,000	82,440	15,509	71,971	92,909

SOUTH REGION

ATLANTA			AVERAGE SALARY RATES				
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	6	411	29,050	28,410	2,146	26,961	29,859
III	9	170	32,500	33,848	3,332	31,599	36,097
IV	8	89	40,911	37,900	3,033	35,853	39,447
V	9	107	47,700	48,434	5,964	44,408	52,460
VI	9	50	52,500	55,895	9,880	49,226	62,564
VII	10	54	59,150	67,080	18,978	54,270	79,890
VIII	8	33	64,850	67,043	15,097	56,852	77,233
IX	5	22	80,500	79,854	10,502	72,765	86,943

MIAMI			AVERAGE SALARY RATES				
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	10	37	28,767	28,842	3,256	26,644	31,040
III	7	65	34,000	35,890	3,828	33,306	38,474
IV	7	56	41,700	41,523	4,489	38,493	44,553
V	8	45	49,200	48,625	6,238	44,414	52,836
VI	9	74	52,700	56,250	7,526	51,170	61,330
VII	6	54	61,250	63,766	11,398	56,072	71,460
VIII	5	22	70,300	69,676	6,744	65,124	74,228
IX	8	18	78,500	75,894	16,600	64,689	87,099

SOUTH REGION

NASHVILLE		AVERAGE SALARY RATES					
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	6	54	28,663	26,571	3,544	24,179	28,963
III	6	47	31,738	32,179	4,649	29,041	35,317
IV	6	53	34,395	35,992	4,937	32,660	39,324
V	6	34	42,200	42,084	2,964	40,083	44,085
VI	4	19	45,050	43,101	4,783	39,872	46,330
VII	4	18	55,200	56,156	7,719	50,946	61,366
VIII	6	14	55,700	57,724	8,679	51,866	63,582
IX	6	7	72,700	71,580	10,053	64,794	78,366

RALEIGH		AVERAGE SALARY RATES					
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	6	235	29,560	30,686	3,923	28,038	33,334
III	5	121	38,500	36,480	4,636	33,351	39,609
IV	9	67	40,000	40,522	4,958	37,175	43,869
V	5	27	49,700	47,600	5,067	44,180	51,020
VI	8	42	54,883	54,908	10,165	48,047	61,769
VII	5	26	61,600	61,054	6,062	56,962	65,146
VIII	5	22	62,200	67,855	9,102	61,711	73,999
IX	5	15	72,500	73,560	7,478	68,512	78,608

MIDDLE WEST REGION

CHICAGO	AVERAGE SALARY RATES						
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	15	121	30,000	29,289	2,899	27,332	31,246
III	16	85	35,559	35,979	3,478	33,631	38,327
IV	21	78	37,800	40,324	12,790	31,691	48,957
V	22	94	46,350	47,057	8,322	41,440	52,674
VI	20	63	52,600	54,577	9,595	48,100	61,054
VII	15	47	60,000	60,530	8,574	54,742	66,317
VIII	15	31	72,000	72,203	11,699	64,306	80,100
IX	12	24	99,450	95,846	14,739	85,897	105,795

ST. LOUIS	AVERAGE SALARY RATES						
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	7	101	30,000	31,426	8,988	25,359	37,493
III	7	124	36,500	38,343	10,222	31,443	45,243
IV	5	166	44,600	48,216	8,697	42,345	54,086
V	8	196	46,600	47,168	6,096	43,053	51,283
VI	8	168	49,900	53,954	13,176	45,060	62,848
VII	4	104	56,650	57,827	8,941	51,792	63,862
VIII	3	79	70,300	72,933	11,783	*	*
IX	4	5	68,100	67,300	9,978	60,565	74,035

WEST REGION

DALLAS — **AVERAGE SALARY RATES**

ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	5	22	30,000	30,930	3,982	28,242	33,618
III	5	17	33,600	32,740	4,334	29,815	35,665
IV	10	29	39,500	40,582	4,620	37,464	43,700
V	14	46	44,989	47,734	7,661	42,563	52,905
VI	14	45	55,350	55,562	7,255	50,665	60,459
VII	6	26	59,969	56,981	10,696	49,761	64,201
VIII	8	17	77,200	77,011	6,745	72,458	81,564
IX	5	11	75,828	81,366	9,312	75,080	87,652

DENVER — **AVERAGE SALARY RATES**

ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	14	80	30,100	29,964	4,849	26,691	33,237
III	20	69	33,250	34,496	4,965	31,145	37,847
IV	21	75	38,000	40,128	5,757	36,242	44,014
V	20	84	46,380	47,635	9,192	41,430	53,840
VI	22	72	52,350	56,356	11,464	48,618	64,094
VII	16	46	57,750	60,401	9,490	53,995	66,807
VIII	15	24	70,300	73,780	16,815	62,430	85,130
IX	12	17	73,250	78,802	21,082	64,572	93,032

FAR WEST REGION

LOS ANGELES		AVERAGE SALARY RATES					
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	36	216	32,000	33,463	5,238	29,927	36,999
III	39	175	42,300	41,077	6,719	36,542	45,612
IV	33	151	46,000	47,181	8,668	41,330	53,032
V	34	134	53,278	55,870	13,009	47,089	64,651
VI	34	125	64,350	67,007	14,509	57,213	76,801
VII	29	105	74,400	76,032	20,853	61,956	90,108
VIII	30	49	83,750	84,990	21,211	70,673	99,307
IX	19	30	96,000	104,136	42,489	75,456	132,816

SAN FRANCISCO		AVERAGE SALARY RATES					
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	33	315	33,294	32,838	4,602	29,732	35,944
III	35	233	37,500	39,102	5,744	35,225	42,979
IV	31	234	46,910	46,819	8,117	41,340	52,298
V	35	252	55,000	56,404	9,468	50,013	62,795
VI	31	192	62,400	65,130	9,948	58,415	71,845
VII	25	165	71,184	74,922	14,412	65,194	84,650
VIII	25	77	80,000	87,302	23,174	71,660	102,944
IX	23	78	92,000	106,559	53,852	70,209	142,909

FAR WEST REGION

PHOENIX	AVERAGE SALARY RATES						
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	9	23	28,000	27,173	3,566	24,766	29,580
III	9	55	33,988	33,473	3,460	33,138	35,808
IV	10	89	41,045	41,137	5,190	37,634	44,640
V	9	39	50,232	49,422	7,522	44,345	54,500
VI	8	58	53,893	53,319	7,338	48,366	58,272
VII	16	46	57,750	60,401	9,490	53,995	66,807
VIII	6	32	69,960	68,853	8,351	63,216	74,490
IX	8	19	96,450	90,197	19,070	77,325	103,069

PORTLAND	AVERAGE SALARY RATES						
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range Low	Middle 50% Range High
I/II	7	11	26,900	27,330	2,734	25,485	29,175
III	5	10	36,000	37,300	5,724	33,436	41,164
IV	7	16	38,500	38,836	4,049	36,103	41,569
V	7	10	45,000	46,936	6,961	42,237	51,635
VI	8	11	50,650	50,555	3,874	47,940	53,170
VII	2	2	60,000	60,000	5,000	56,625	63,375
VIII	5	5	72,000	70,600	11,200	63,040	78,160
IX	2	3	63,700	63,700	1,300	*	*

FAR WEST REGION

SEATTLE	AVERAGE SALARY RATES						
ASCE Grade	Number of Firms	Number of Individuals	Median	Mean	Standard Deviation	Middle 50% Range	
						Low	High
I/II	19	85	31,000	30,850	2,714	29,018	32,682
III	20	105	35,788	36,174	3,824	33,593	38,755
IV	18	46	39,675	41,006	5,356	37,391	44,621
V	20	73	46,400	46,356	5,625	42,559	50,153
VI	19	62	51,000	52,578	5,445	48,903	56,253
VII	17	38	63,500	67,104	11,396	59,412	74,796
VIII	14	25	71,978	79,121	20,804	65,078	93,164
IX	6	28	84,250	88,003	21,254	73,657	102,349

* *Insufficient data to calculate figures*

Median entrance salaries by professional grade for 21 metropolitan areas are compared against their regional averages below.

TABLE 11 - Entrance Salary Medians: Ratios of Cities to Regions for Combined Employment Categories

MID-ATLANTIC Region	ASCE Grade	Number of Organizations	MEDIAN ENTRANCE SALARIES		RATIO (City to Region)
			City	Region	
NEW YORK	I/II	31	28,500	26,000	1.10
	III	29	33,600	30,600	1.10
	IV	30	38,510	35,000	1.10
	V	29	45,000	42,560	1.06
	VI	27	51,000	48,150	1.06
	VII	24	58,870	53,700	1.10
	VIII	20	69,710	63,550	1.10
	IX	14	84,100	71,400	1.18
WASHINGTON,DC	I/II	9	25,296	26,000	.97
	III	11	30,744	30,600	1.00
	IV	10	36,000	35,000	1.03
	V	11	40,000	42,560	.94
	VI	9	45,621	48,150	.95
	VII	9	51,470	53,700	.96
	VIII	9	63,200	63,550	.99
	IX	5	71,400	71,400	1.00
PHILADELPHIA	I/II	7	22,900	26,000	.88
	III	10	30,000	30,600	.98
	IV	9	31,800	35,000	.91
	V	7	46,176	42,560	1.08
	VI	6	49,250	48,150	1.02
	VII	4	60,160	53,700	1.12
	VIII	4	73,060	63,550	1.15
	IX	3	80,000	71,400	1.12

PITTSBURGH	I/II	6	25,300	26,000	.97
	III	6	27,750	30,600	.91
	IV	6	34,600	35,000	.99
	V	6	38,915	42,560	.91
	VI	5	44,272	48,150	.92
	VII	7	52,400	53,700	.98
	VIII	5	57,824	63,550	.91
	IX	5	65,000	71,400	.91

NEW ENGLAND Region	ASCE Grade	Number of Organizations	MEDIAN ENTRANCE SALARIES		RATIO (City to Region)
			City	Region	
BOSTON	I/II	9	27,300	25,000	1.09
	III	10	31,415	30,744	1.02
	IV	10	38,010	34,152	1.11
	V	9	47,800	40,000	1.20
	VI	8	51,350	44,500	1.15
	VII	6	64,800	51,000	1.27
	VIII	6	69,050	60,000	1.15
	IX	4	78,684	73,200	1.07

SOUTH Region	ASCE Grade	Number of Organizations	MEDIAN ENTRANCE SALARIES		RATIO (City to Region)
			City	Region	
ATLANTA	I/II	6	23,718	25,296	.94
	III	9	29,577	29,700	.99
	IV	8	34,930	34,860	1.00
	V	9	40,500	40,000	1.01
	VI	6	48,520	42,773	1.13
	VII	7	54,540	50,000	1.09
	VIII	6	50,700	54,400	.93
	IX	5	62,100	65,500	.95
MIAMI	I/II	9	26,000	25,296	1.03
	III	9	31,000	29,700	1.04
	IV	8	35,000	34,860	1.00
	V	9	41,500	40,000	1.04
	VI	9	46,500	42,773	1.09
	VII	6	51,250	50,000	1.03
	VIII	6	53,500	54,400	.98
	IX	6	76,172	65,500	1.16
NASHVILLE	I/II	5	23,000	25,296	.91
	III	6	27,744	29,700	.93
	IV	3	29,000	34,860	.83
	V	6	34,754	40,000	.87
	VI	5	36,000	42,773	.84
	VII	5	39,100	50,000	.78
	VIII	5	39,900	54,400	.73
	IX	4	60,000	65,500	.92

RALEIGH	I/II	8	26,147	25,296	1.03
	III	6	30,222	29,700	1.02
	IV	7	34,152	34,860	.98
	V	5	41,400	40,000	1.04
	VI	8	44,400	42,773	1.04
	VII	5	53,900	50,000	1.08
	VIII	7	59,016	54,400	1.08
	IX	6	66,592	65,500	1.02

MIDDLE WEST Region	ASCE Grade	Number of Organizations	MEDIAN ENTRANCE SALARIES		RATIO (City to Region)
			City	Region	
CHICAGO	I/II	10	25,148	25,200	1.00
	III	12	30,744	29,869	1.03
	IV	14	33,500	33,717	.99
	V	16	37,358	37,584	.99
	VI	15	43,800	42,000	1.04
	VII	10	49,080	47,700	1.03
	VIII	12	64,000	54,185	1.18
	IX	9	72,020	64,900	1.11

ST. LOUIS	I/II	6	28,020	25,200	1.11
	III	6	28,950	29,869	.97
	IV	3	36,120	33,717	1.07
	V	5	38,000	37,584	1.01
	VI	5	45,000	42,000	1.07
	VII	3	54,000	47,700	1.13
	VIII	4	60,500	54,185	1.12
	IX	3	62,100	64,900	.96

CLEVELAND	I/II	3	24,500	25,200	.97
	III	2	32,600	29,869	1.09
	IV	2	38,850	33,717	1.15
	V	3	38,480	37,584	1.02
	VI	2	46,450	42,000	1.11
	VII	1	51,000	47,700	1.07
	VIII	2	59,800	54,185	1.10
	IX	0	N/A	64,900	N/A

DETROIT	I/II	6	25,350	25,200	1.01
	III	5	30,700	29,869	1.03
	IV	3	34,800	33,717	1.03
	V	5	41,000	37,584	1.09
	VI	3	43,500	42,000	1.04
	VII	3	52,800	47,700	1.11
	VIII	3	55,100	54,185	1.02
	IX	2	67,500	64,900	1.04

MILWAUKEE	I/II	9	26,500	25,200	1.05
	III	9	30,000	29,869	1.00
	IV	10	36,670	33,717	1.09
	V	9	40,000	37,584	1.06
	VI	6	49,550	42,000	1.18
	VII	7	47,000	47,700	.99
	VIII	4	53,050	54,185	.98
	IX	4	68,700	64,900	1.06

WEST Region	ASCE Grade	Number of Organizations	MEDIAN ENTRANCE SALARIES		RATIO (City to Region)
			City	Region	
DALLAS	I/II	5	26,000	25,740	1.01
	III	5	30,100	29,700	1.01
	IV	8	35,410	34,152	1.04
	V	10	40,126	39,000	1.03
	VI	8	46,232	45,000	1.03
	VII	4	56,000	50,000	1.12
	VIII	6	60,092	54,000	1.11
	IX	4	67,850	64,900	1.05
HOUSTON	I/II	8	24,950	25,740	.97
	III	8	31,750	29,700	1.07
	IV	7	38,000	34,152	1.11
	V	7	38,200	39,000	.98
	VI	7	59,000	45,000	1.31
	VII	4	58,700	50,000	1.17
	VIII	4	54,000	54,000	1.00
	IX	2	71,050	64,900	1.09
DENVER	I/II	13	25,420	25,740	.99
	III	14	29,060	29,700	.98
	IV	16	34,360	34,152	1.01
	V	15	39,000	39,000	1.00
	VI	15	45,000	45,000	1.00
	VII	14	51,424	50,000	1.03
	VIII	9	52,200	54,000	.97
	IX	8	64,850	64,900	1.00

FAR WEST Region	ASCE Grade	Number of Organizations	MEDIAN ENTRANCE SALARIES		RATIO (City to Region)
			City	Region	
LOS ANGELES	I/II	37	30,000	28,000	1.07
	III	32	38,352	34,100	1.12
	IV	33	42,000	39,850	1.05
	V	34	46,900	46,682	1.00
	VI	34	54,050	51,000	1.06
	VII	29	60,000	58,406	1.03
	VIII	30	68,000	65,000	1.05
	IX	11	80,000	72,000	1.11

PHOENIX	I/II	6	23,500	28,000	.84
	III	7	31,200	34,100	.91
	IV	8	36,653	39,850	.92
	V	6	39,260	46,682	.84
	VI	7	45,157	51,000	.89
	VII	7	55,650	58,406	.95
	VIII	3	57,600	65,000	.89
	IX	2	67,282	72,000	.93

SAN FRANCISCO	I/II	29	28,800	28,000	1.03
	III	29	35,000	34,100	1.03
	IV	26	40,500	39,850	1.02
	V	30	48,750	46,682	1.04
	VI	23	53,000	51,000	1.04
	VII	17	60,000	58,406	1.03
	VIII	20	70,100	65,000	1.08
	IX	11	72,468	72,000	1.01

SEATTLE	I/II	15	28,000	28,000	1.00
	III	17	32,700	34,100	.96
	IV	13	37,400	39,850	.94
	V	15	40,095	46,682	.86
	VI	14	47,000	51,000	.92
	VII	12	57,100	58,406	.98
	VIII	11	64,344	65,000	.99
	IX	3	68,150	72,000	.95

CHANGE IN ENTRANCE SALARY MEDIANS FOR
COMBINED EMPLOYMENT CATEGORIES, 1983-1991

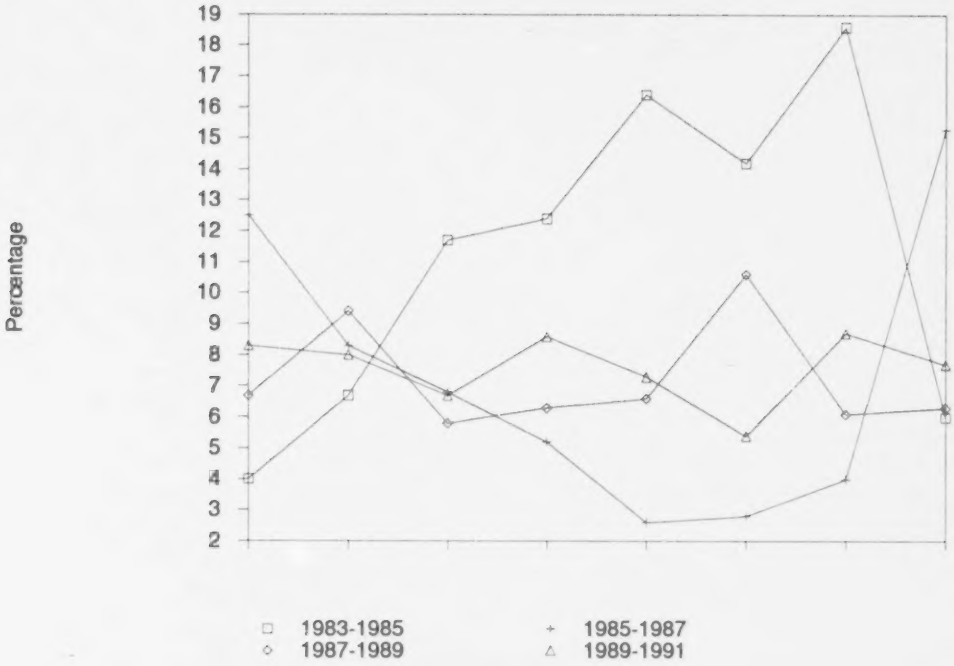
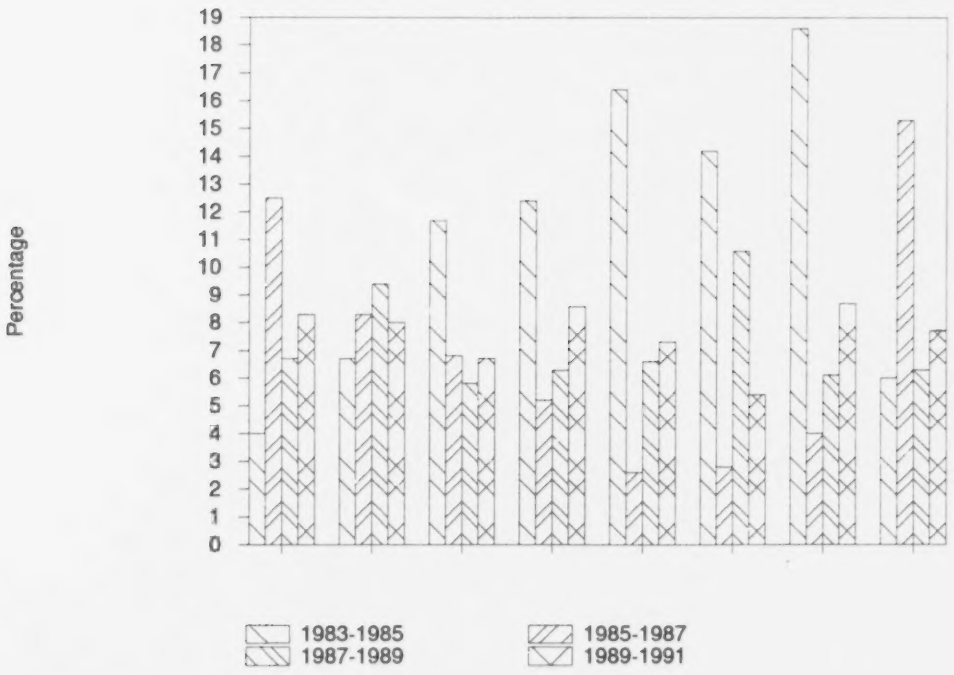


FIGURE 2

CHANGE IN ENTRANCE SALARY MEDIANS FOR
COMBINED EMPLOYMENT CATEGORIES, 1983-1991



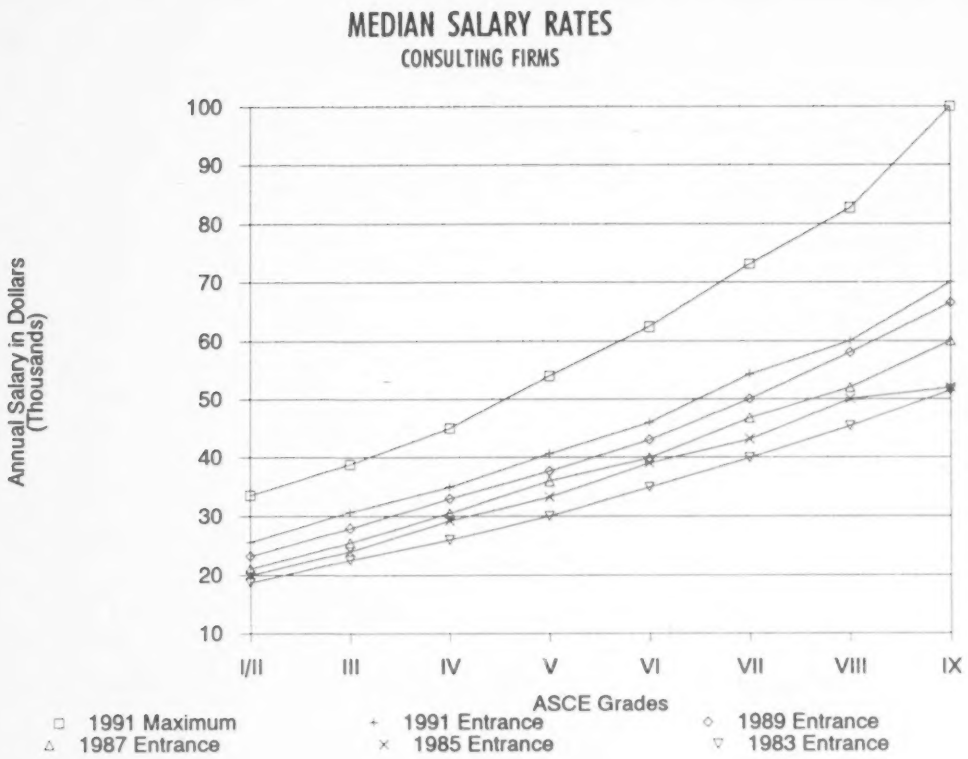

MEDIAN SALARY RATES
CONSULTING FIRMS
Annual Salary in Dollars (Thousands)
100
90
80
70
60
50
40
30
20
10
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

FIGURE 3

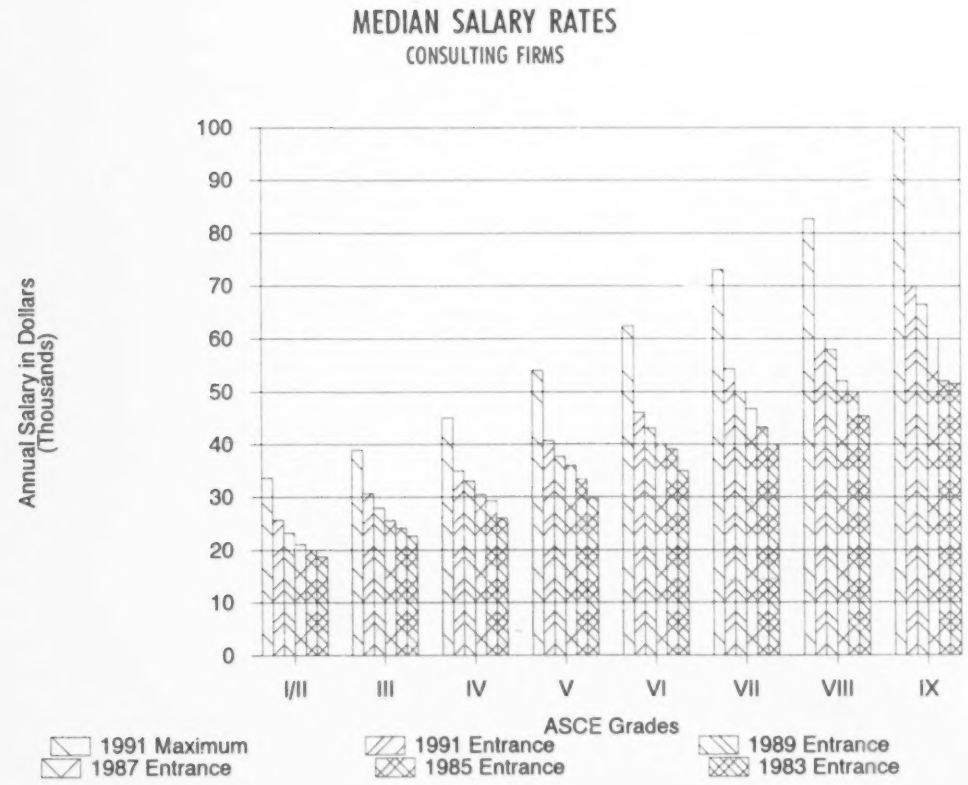

MEDIAN SALARY RATES
CONSULTING FIRMS
Annual Salary in Dollars (Thousands)
100
90
80
70
60
50
40
30
20
10
0
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

TABLE 12 -- Consulting Firms -- Annual Salaries, in Dollars						
ENTRANCE RATES					MAXIMUM RATES	
ASCE Grade	Number of Individuals	Mean Salary	Median Salary	Increase from 1987-1989 Mean as a Percentage	Mean Salary	Median Salary
I/II	2,981	25,655	25,600	9.1	33,413	33,600
III	2,546	31,069	30,690	9.4	39,937	38,875
IV	2,822	36,187	35,000	8.7	46,318	45,000
V	2,434	42,576	40,630	10.5	54,504	54,000
VI	2,161	47,742	46,000	6.1	62,501	62,400
VII	1,375	55,360	54,300	7.3	74,382	73,100
VIII	904	63,473	60,000	9.4	84,900	82,700
IX	664	71,809	70,000	6.8	101,370	100,000

TABLE 12 -- Consulting Firms -- Annual Salaries, in Dollars							
AVERAGE SALARY RATES							
ASCE Grade	Mean Average Salary	Increase from 1987-89 Mean Average as a Percentage	Standard Deviation	Middle 50% Range		95% Range	
				Low	High	Low	High
I/II	29,215	9.9	4,772	25,994	32,436	19,671	38,759
III	35,550	9.6	5,924	31,551	39,549	23,702	47,398
IV	41,190	9.8	7,699	35,993	46,387	25,792	56,588
V	48,993	10.5	9,683	42,457	55,529	29,627	68,359
VI	56,758	11.4	12,448	48,356	65,160	31,862	81,654
VII	64,071	8.4	15,764	53,430	74,712	32,543	95,599
VIII	74,245	12.1	18,892	61,493	86,997	36,461	112,029
IX	87,321	4.8	31,515	66,048	108,594	24,201	150,261

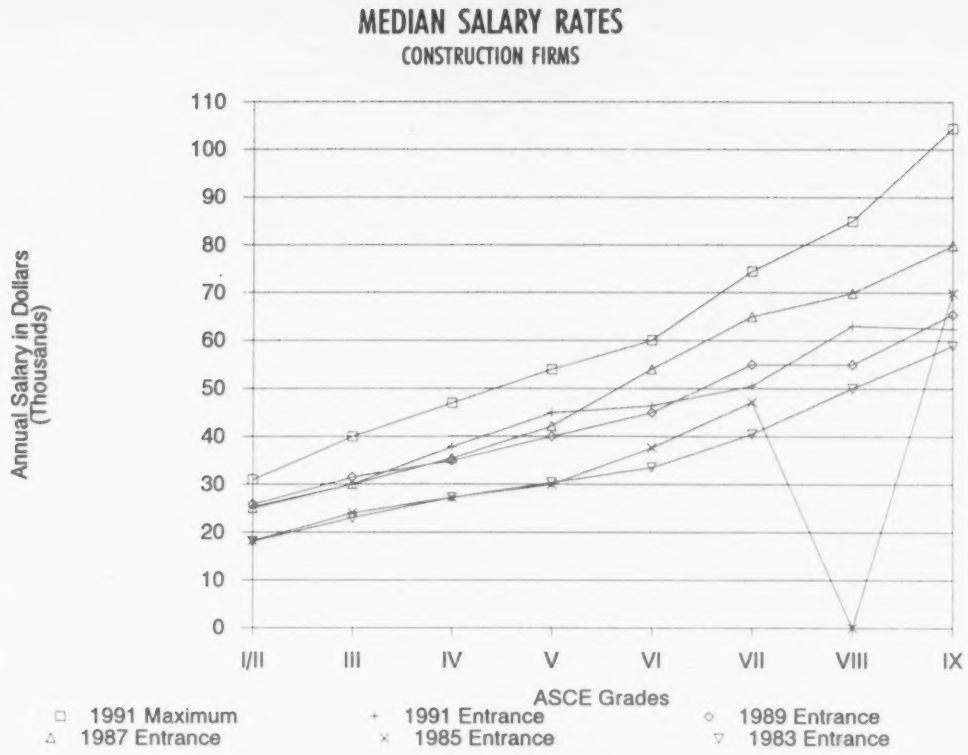

MEDIAN SALARY RATES
CONSTRUCTION FIRMS
Annual Salary in Dollars (Thousands)
110
100
90
80
70
60
50
40
30
20
10
0
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

FIGURE 4

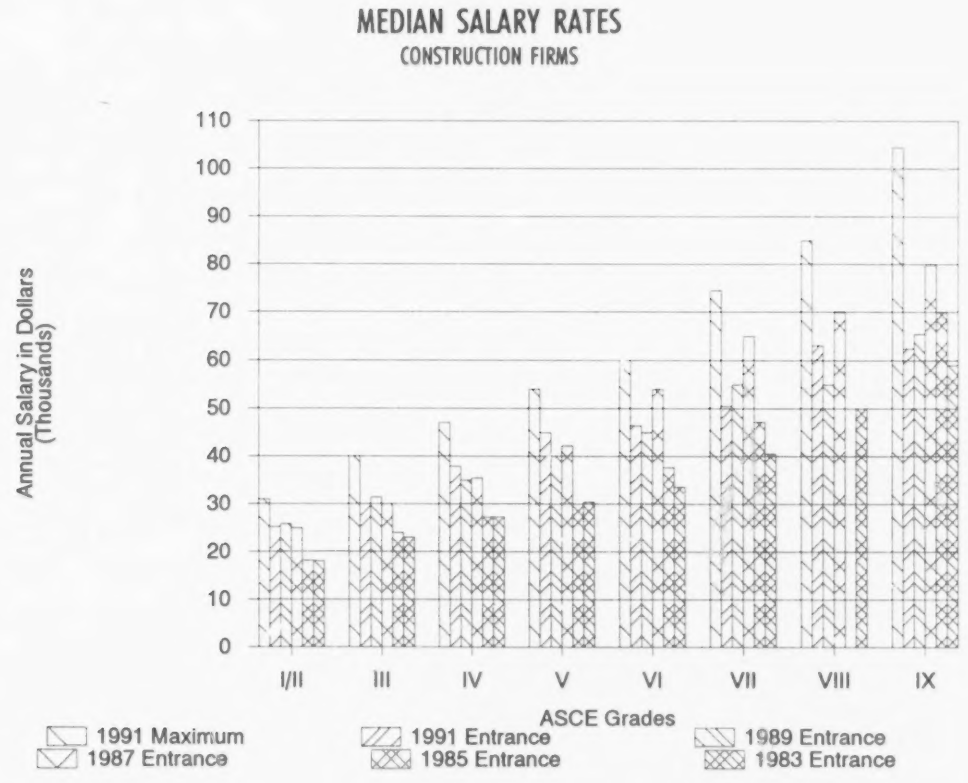

MEDIAN SALARY RATES
CONSTRUCTION FIRMS
Annual Salary in Dollars (Thousands)
110
100
90
80
70
60
50
40
30
20
10
0
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

TABLE 13 -- Construction Firms -- Annual Salaries, in Dollars						
ENTRANCE RATES					MAXIMUM RATES	
ASCE Grade	Number of Individuals	Mean Salary	Median Salary	Increase from 1987-1989 Mean as a Percentage	Mean Salary	Median Salary
I/II	99	25,655	25,250	1.6	33,784	31,000
III	67	30,828	30,000	3.2	42,128	40,000
IV	99	37,077	37,800	6.2	48,420	47,000
V	71	41,464	45,000	4.3	55,192	54,000
VI	53	47,711	46,400	-1.8	60,145	60,000
VII	75	50,972	50,500	-9.5	70,881	74,500
VIII	33	67,390	63,000	10.1	80,672	85,000
IX	70	70,480	62,400	2.4	100,700	104,500

TABLE 13 -- Construction Firms -- Annual Salaries, in Dollars							
AVERAGE SALARY RATES							
ASCE Grade	Mean Average Salary	Increase from 1987-89 Mean Average as a Percentage	Standard Deviation	Middle 50% Range		95% Range	
				Low	High	Low	High
I/II	28,844	5.5	4,691	25,678	32,010	19,462	38,226
III	36,098	9.4	4,519	33,048	39,148	27,060	45,136
IV	45,237	11.9	6,804	40,644	49,830	31,629	58,845
V	47,750	2.0	8,880	41,756	53,744	29,990	65,510
VI	58,192	3.1	12,927	49,466	66,918	32,338	84,046
VII	68,715	13.5	19,852	55,315	82,115	29,011	108,419
VIII	81,091	14.8	23,597	65,163	97,019	33,897	128,285
IX	89,146	7.0	25,008	72,266	106,026	39,130	139,162

MEDIAN SALARY RATES
DESIGN/CONSTRUCT FIRMS
Annual Salary in Dollars (Thousands)
90
80
70
60
50
40
30
20
10
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

FIGURE 5

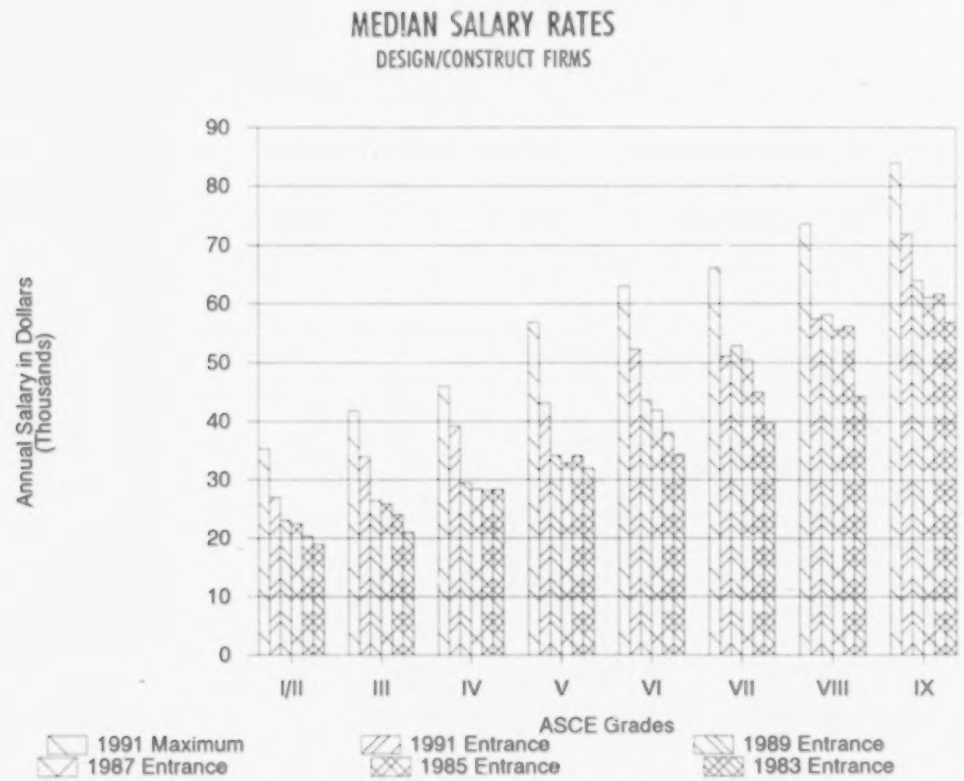

MEDIAN SALARY RATES
DESIGN/CONSTRUCT FIRMS
Annual Salary in Dollars (Thousands)
90
80
70
60
50
40
30
20
10
0
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

TABLE 14 -- Design/Construct Firms -- Annual Salaries, in Dollars						
ENTRANCE RATES					MAXIMUM RATES	
ASCE Grade	Number of Individuals	Mean Salary	Median Salary	Increase from 1987-1989 Mean as a Percentage	Mean Salary	Median Salary
I/II	294	27,343	27,000	22.4	35,568	35,300
III	264	34,097	34,000	26.9	40,986	41,800
IV	281	40,301	39,200	27.9	48,608	46,000
V	280	43,767	43,200	20.7	55,943	56,931
VI	224	52,982	52,300	19.0	64,763	63,000
VII	129	53,324	51,000	9.3	70,749	66,150
VIII	96	60,088	57,350	1.9	74,454	73,660
IX	20	74,665	72,000	14.9	93,442	84,000

TABLE 14 -- Design/Construct Firms -- Annual Salaries, in Dollars							
AVERAGE SALARY RATES							
ASCE Grade	Mean Average Salary	Increase from 1987-89 Mean Average as a Percentage	Standard Deviation	Middle 50% Range		95% Range	
				Low	High	Low	High
I/II	30,910	18.4	4,299	28,008	33,812	22,312	39,508
III	37,402	20.5	6,393	33,087	41,717	24,616	50,188
IV	44,377	21.9	9,006	38,298	50,456	26,365	62,389
V	50,501	14.0	8,437	44,806	56,196	33,627	67,375
VI	59,570	13.5	10,366	52,573	66,567	38,838	80,302
VII	68,326	20.7	11,178	60,781	75,871	45,970	90,682
VIII	75,874	16.9	17,561	64,020	87,728	40,752	110,996
IX	88,411	12.7	29,607	68,426	108,396	29,197	147,625

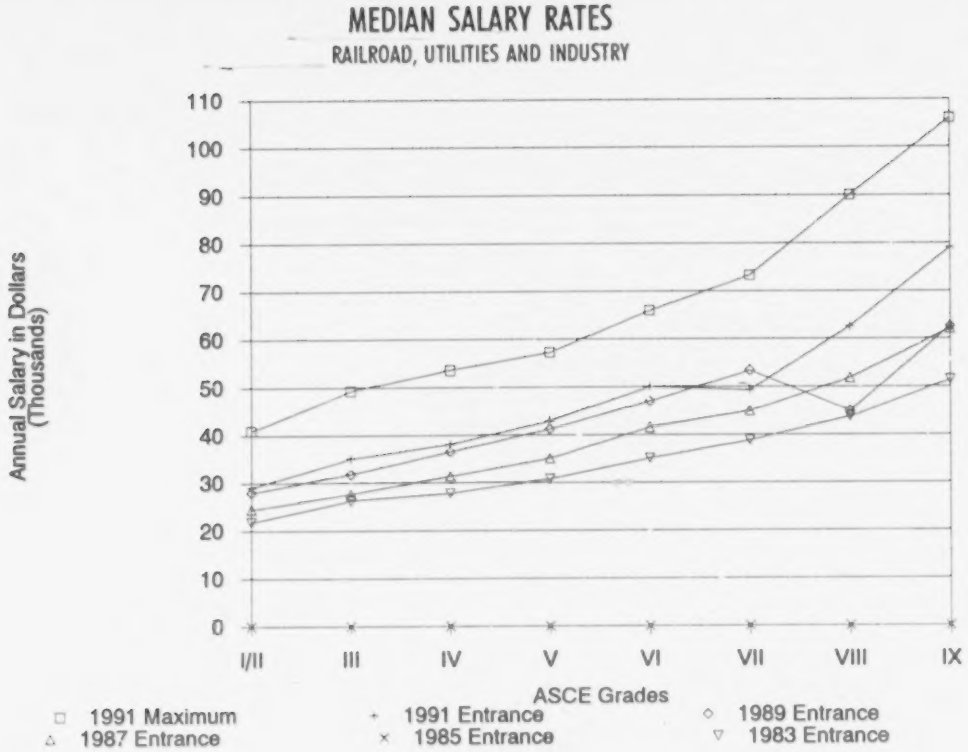

MEDIAN SALARY RATES
RAILROAD, UTILITIES AND INDUSTRY
Annual Salary in Dollars (Thousands)
110
100
90
80
70
60
50
40
30
20
10
0
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

FIGURE 6

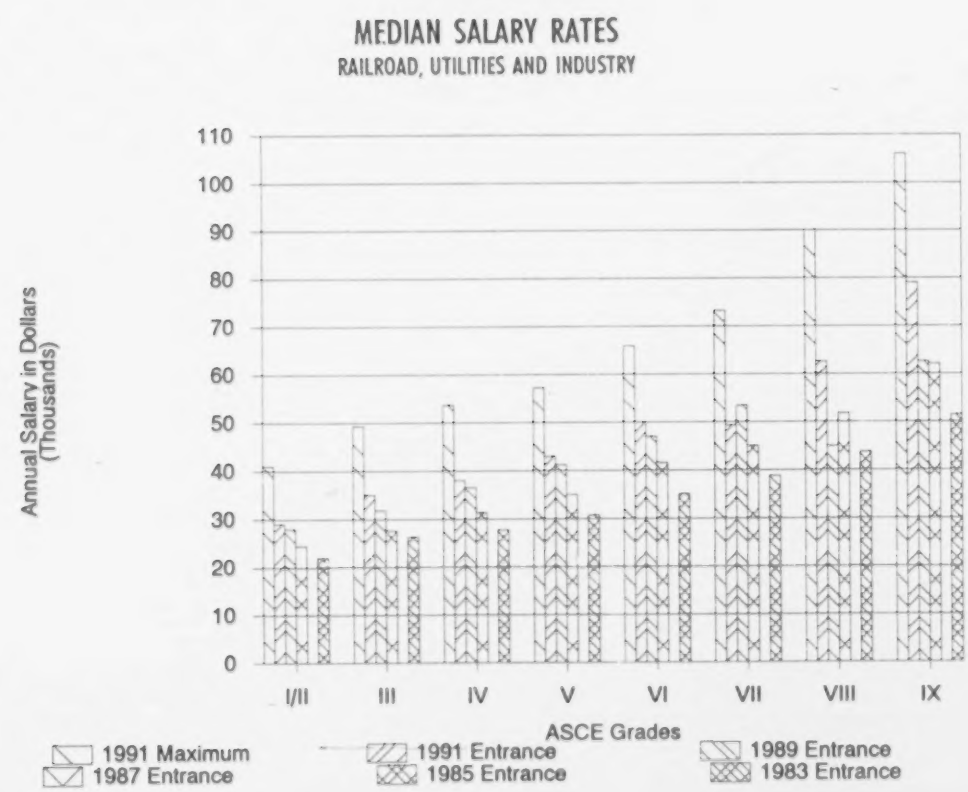

MEDIAN SALARY RATES
RAILROAD, UTILITIES AND INDUSTRY
Annual Salary in Dollars (Thousands)
110
100
90
80
70
60
50
40
30
20
10
0
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

TABLE 15 -- Railroad, Utilities & Industry -- Annual Salaries, in Dollars						
ENTRANCE RATES					MAXIMUM RATES	
ASCE Grade	Number of Individuals	Mean Salary	Median Salary	Increase from 1987-1989 Mean as a Percentage	Mean Salary	Median Salary
I/II	212	29,614	29,100	6.5	42,434	41,000
III	183	34,627	35,000	4.7	49,425	49,300
IV	178	38,681	38,069	4.5	53,966	53,600
V	178	44,392	42,948	6.2	61,171	57,240
VI	39	49,934	50,000	7.1	68,404	65,950
VII	125	51,405	49,300	-3.4	73,872	73,195
VIII	23	63,904	62,508	42.0	95,473	90,000
IX	7	79,487	79,100	27.5	103,057	106,000

TABLE 15 -- Railroad, Utilities & Industry -- Annual Salaries, in Dollars							
AVERAGE SALARY RATES							
ASCE Grade	Mean Average Salary	Increase from 1987-89 Mean Average as a Percentage	Standard Deviation	Middle 50% Range		95% Range	
				Low	High	Low	High
I/II	35,159	13.1	5,961	31,135	39,183	23,237	47,081
III	41,325	4.5	7,789	36,067	46,583	25,747	56,903
IV	47,095	6.3	8,224	41,544	52,646	30,647	63,543
V	53,644	10.9	12,866	44,959	62,329	27,912	79,376
VI	60,537	5.6	12,992	51,767	69,307	34,553	86,521
VII	64,528	6.7	13,245	55,588	73,468	38,038	91,018
VIII	73,206	30.6	11,404	65,508	80,904	50,398	96,014
IX	83,524	11.3	11,813	75,550	91,498	59,898	107,150

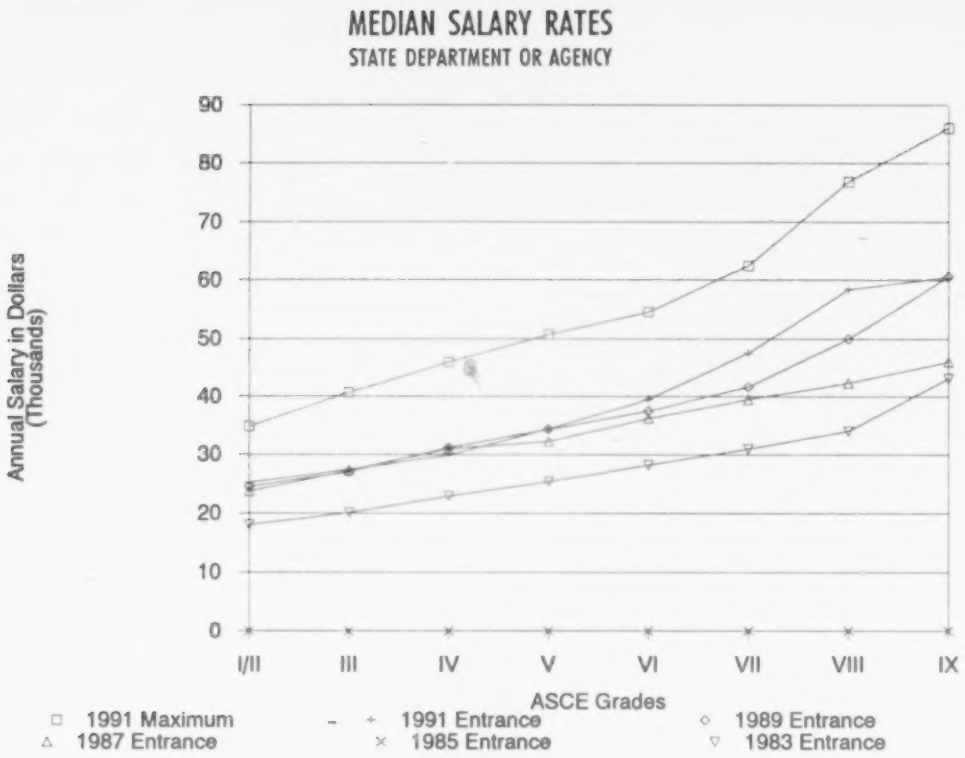

MEDIAN SALARY RATES
STATE DEPARTMENT OR AGENCY
Annual Salary in Dollars (Thousands)
90
80
70
60
50
40
30
20
10
0
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

FIGURE 7

MEDIAN SALARY RATES
STATE DEPARTMENT OR AGENCY
Annual Salary in Dollars (Thousands)
90
80
70
60
50
40
30
20
10
0
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

TABLE 16 -- State Department or Agency -- Annual Salaries, in Dollars						
ENTRANCE RATES					MAXIMUM RATES	
ASCE Grade	Number of Individuals	Mean Salary	Median Salary	Increase from 1987-1989 Mean as a Percentage	Mean Salary	Median Salary
I/II	454	25,612	25,300	2.9	36,564	34,900
III	672	28,973	27,492	3.6	40,709	40,706
IV	675	32,273	29,950	1.9	46,203	45,943
V	773	36,246	34,485	3.2	51,172	50,825
VI	328	39,481	39,500	0.5	53,934	54,574
VII	292	47,135	47,575	10.1	63,536	62,515
VIII	49	58,150	58,400	16.2	74,597	76,850
IX	12	64,642	60,488	2.2	85,770	85,988

TABLE 16 -- State Department or Agency -- Annual Salaries, in Dollars							
AVERAGE SALARY RATES							
ASCE Grade	Mean Average Salary	Increase from 1987-89 Mean Average as a Percentage	Standard Deviation	Middle 50% Range		95% Range	
				Low	High	Low	High
I/II	29,378	7.7	3,630	26,928	31,828	22,118	36,638
III	34,633	10.1	6,543	30,217	39,050	21,547	47,719
IV	39,704	7.6	7,364	34,733	44,675	24,976	54,432
V	45,353	12.0	8,259	39,778	50,928	28,835	61,871
VI	48,786	4.2	7,066	44,016	53,555	34,654	62,918
VII	57,562	11.2	7,848	52,265	62,859	41,866	73,258
VIII	66,611	8.7	7,555	61,511	71,711	51,501	81,721
IX	80,404	6.7	12,393	72,039	88,769	55,618	105,190

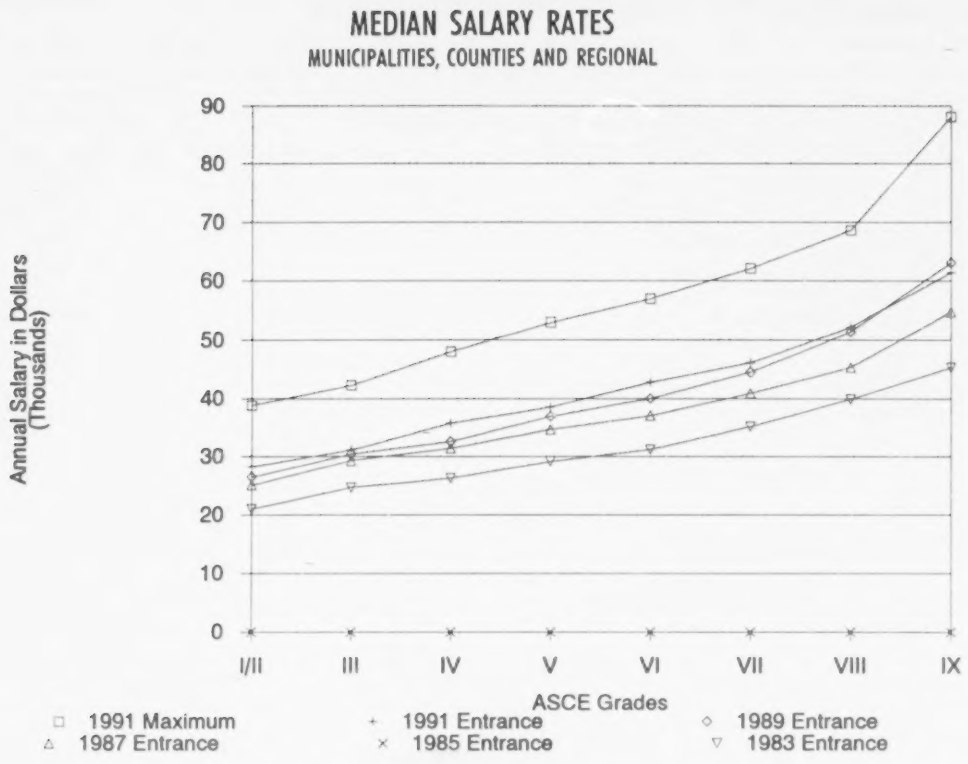

MEDIAN SALARY RATES
MUNICIPALITIES, COUNTIES AND REGIONAL
Annual Salary in Dollars (Thousands)
90
80
70
60
50
40
30
20
10
0
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

FIGURE 8

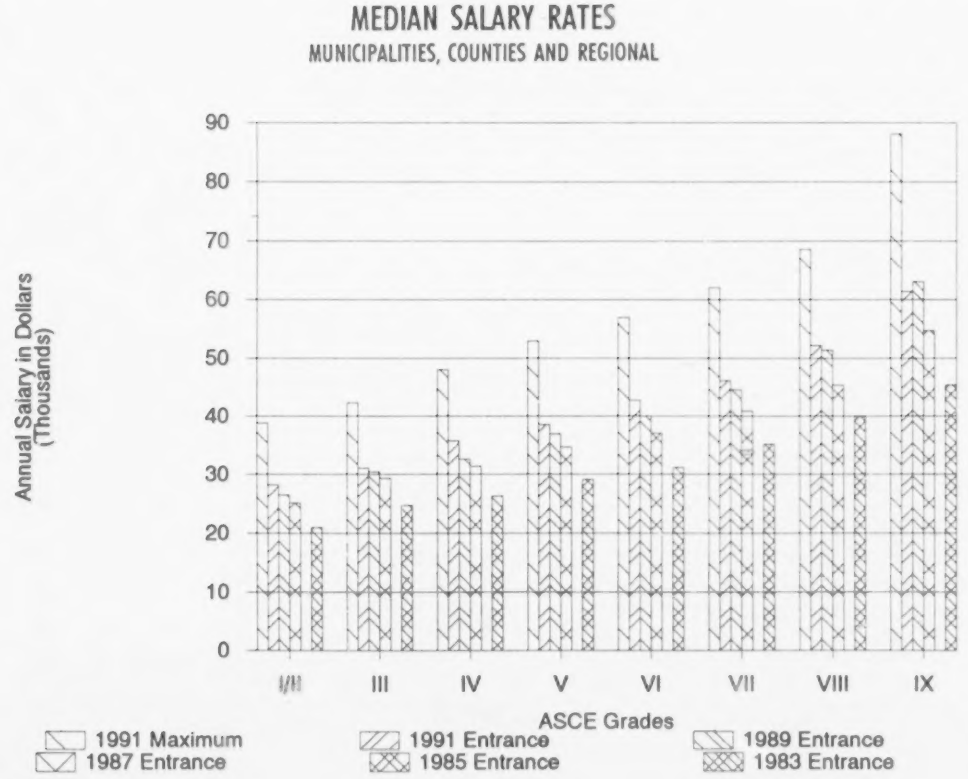

MEDIAN SALARY RATES
MUNICIPALITIES, COUNTIES AND REGIONAL
Annual Salary in Dollars (Thousands)
90
80
70
60
50
40
30
20
10
0
I/II
III
IV
V
VI
VII
VIII
IX
ASCE Grades
1991 Maximum
1991 Entrance
1989 Entrance
1987 Entrance
1985 Entrance
1983 Entrance

TABLE 17 -- Municipalities, Counties, Regional -- Annual Salaries, in Dollars						
ENTRANCE RATES					MAXIMUM RATES	
ASCE Grade	Number of Individuals	Mean Salary	Median Salary	Increase from 1987-1989 Mean as a Percentage	Mean Salary	Median Salary
I/II	468	28,513	28,280	4.5	38,247	38,800
III	520	32,188	31,200	4.0	42,521	42,300
IV	474	36,258	35,795	7.5	47,298	48,006
V	377	40,170	38,558	5.7	53,058	53,000
VI	254	42,936	42,746	6.3	58,376	56,964
VII	176	48,150	46,148	5.4	63,649	62,094
VIII	110	52,791	52,208	2.5	73,106	68,600
IX	36	61,800	61,400	-3.9	85,722	88,080

TABLE 17 -- Municipalities, Counties, Regional -- Annual Salaries, in Dollars							
AVERAGE SALARY RATES							
ASCE Grade	Mean Average Salary	Increase from 1987-89 Mean Average as a Percentage	Standard Deviation	Middle 50% Range		95% Range	
				Low	High	Low	High
I/II	33,168	10.4	5,410	29,516	36,820	22,348	43,988
III	37,108	6.5	5,576	33,344	40,873	25,956	48,260
IV	42,061	7.9	7,478	37,013	47,109	27,105	57,017
V	46,765	6.3	8,011	41,358	52,172	30,743	62,787
VI	51,111	7.0	8,623	45,290	56,932	33,865	68,357
VII	59,381	7.1	12,541	50,916	67,846	34,299	84,463
VIII	65,673	7.9	15,763	55,032	76,313	34,147	97,199
IX	78,437	4.1	19,716	65,129	91,745	39,005	117,869

AVERAGE SALARY RANGES FOR COMBINED CATEGORIES

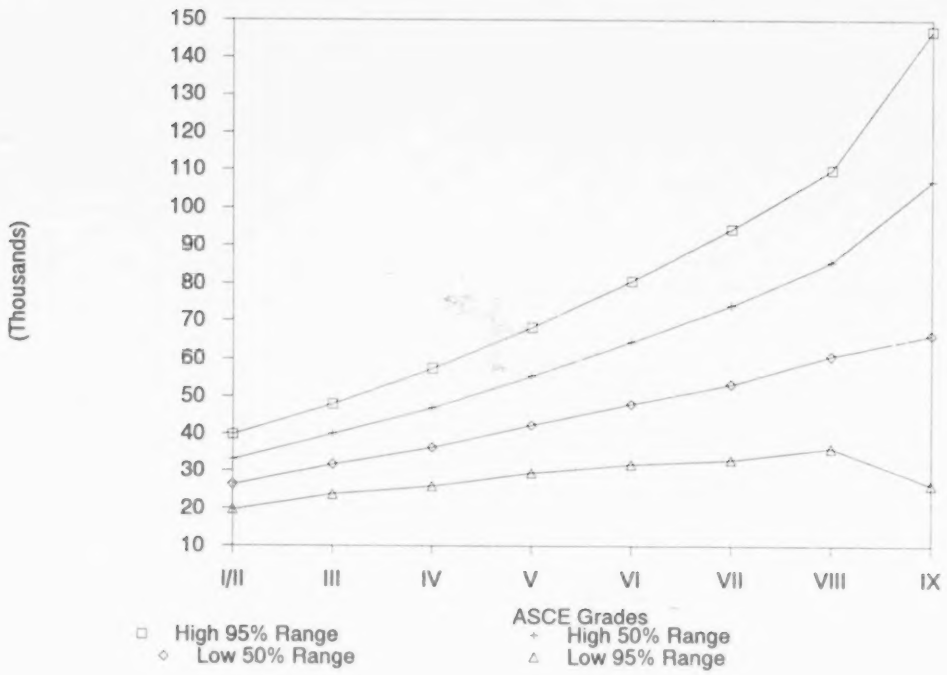


FIGURE 9

Job Classification

An intrinsic limitation of the survey is that many employers who responded have grade classifications that differ from the ASCE professional grades or have no formal classification system at all. This requires interpretation and interpolation by these employers to correlate their civil engineer employees with the ASCE grades. Misinterpretation of grade levels may account in part for the wide variance at some grade levels. At lower and middle grade levels, determination of a standard deviation appears to present a valid statistical tool for determining the degree of skewing of the salaries within the grade. However, the spread of the 50% and 95% ranges tends to increase significantly at the higher professional levels, where the likelihood of misinterpretation is greater and fewer individuals are surveyed.

TABLE 18 -- Combined Employment Categories -- Annual Salaries, in Dollars						
ENTRANCE RATES					MAXIMUM RATES	
ASCE Grade	Number of Individuals	Mean Salary	Median Salary	Increase from 1987-1989 Mean as a Percentage	Mean Salary	Median Salary
I/II	4,508	26,181	26,000	7.8	34,497	30,000
III	4,252	31,397	30,744	8.9	40,748	40,500
IV	4,529	36,323	35,000	9.1	46,913	46,000
V	4,113	42,155	40,400	10.4	54,574	54,040
VI	3,059	46,984	45,775	7.3	61,907	61,250
VII	2,172	53,495	52,000	7.4	71,973	70,450
VIII	1,215	61,190	60,000	9.6	82,097	80,000
IX	809	70,782	70,000	6.7	100,279	95,346

TABLE 18 -- Combined Employment Categories -- Annual Salaries, in Dollars							
AVERAGE SALARY RATES							
ASCE Grade	Mean Average Salary	Increase from 1987-89 Mean Average as a Percentage	Standard Deviation	Middle 50% Range		95% Range	
				Low	High	Low	High
I/II	29,794	9.9	5,058	26,380	33,208	19,678	39,910
III	35,950	9.6	6,085	31,843	40,057	23,780	48,120
IV	41,699	10.0	7,866	36,389	47,009	25,967	57,431
V	48,896	10.4	9,685	42,359	55,433	29,526	68,266
VI	56,213	10.9	12,185	47,988	64,438	31,843	80,583
VII	63,680	9.8	15,323	53,337	74,023	33,034	94,326
VIII	73,116	12.7	18,455	60,659	85,573	36,206	110,026
IX	86,640	6.2	30,191	66,261	107,019	26,258	147,022

RELATED ASCE REFERENCES

ASCE's Manual No. 55, *Guide to Employment Conditions for Civil Engineers*, offers current guidelines regarding professional employment conditions and grade descriptions and recommendations on compensation and benefits, including recommended ranges of total (salary plus benefit) compensation for the ASCE professional grades. The 1988 edition of Manual No. 55 is available through the ASCE Publications Fulfillment Department.

In accordance with the recommendations in Manual No. 55, many ASCE Sections and Branches conduct local salary surveys to establish a current salary base along with adjustment indices for their areas to use with the Manual No. 55 compensation multiples.

The ASCE Salary Index published annually in *Civil Engineering Magazine* shows salary trends in twenty-one major metropolitan areas and six regional highway departments. The Index is computed by applying a formula to the sum of average entrance rates for grades I/II and III. The most recent index was published in the October 1991 issue of Civil Engineering and is contained in Appendix 3.

ACKNOWLEDGEMENTS

The number of employer responses and the sampling of employees represented in this report have been developed from the national ASCE membership data base and the efforts of local ASCE members in completing the salary survey questionnaires. Their contribution is vital to the success of the survey.

The Committee on Employment Conditions is grateful to all who supplied the data that made this report possible. The demand for copies of the survey shows its usefulness to employers and the employees alike. COEC appreciates suggestions and comments for improvements in future surveys.

Members of the ASCE Committee on Employment Conditions in 1990 and/or 1991 included: Chairman Harold R. Clemmer (1990) and Rajan I. Sheth (1991), committee members Robert L. Cagle III, Deborah A. Foley, William H. Ghormley, Richard Q. Gilmore, D. Wayne Klotz, Harold R. Murray, Rodney P. Plourde, Henry Van Liles, Jr. and Norman G. Weintraub; corresponding members J. Edward Doyle, John R. Ellis, Oscar R. George, Reinardo Malave, Dennis R. Martenson, J.A. Padgett, Jr., Michael Riddiford, Lorenzo C. Serra, Donald E. Sterling and Barry F. Winkler. Staff support was provided by Grace M. Waldvogel. Production services were provided by Karyn Witzel.

APPENDIX 1 - ASCE Survey of Civil Engineering Salaries

1991 ASCE SURVEY OF CIVIL ENGINEERING SALARIES

Name of Organization _____ Name of Preparer _____

Address _____

City _____ State _____ Zip _____

INSTRUCTIONS

1. Please refer to the ASCE Professional Grade Descriptions (copy enclosed) and assign each engineering position in your organization to the appropriate ASCE Grade. The relationship between U.S. Civil Service Grades and ASCE Grades is shown in Table I of the enclosure.
2. Report data in terms of ANNUAL BASE SALARY only. Monthly or weekly rates should be converted to annual salary. Do not include items such as bonuses, profit sharing, benefits, etc.
3. Round salary and incentive compensation to NEAREST HUNDRED DOLLARS. If no incentive compensation enter "0".

QUESTIONNAIRE -- PART I, SALARY DATA

1. Please indicate which of the major employment categories listed below best applies to your organization by putting the appropriate number in the box to the right ..... ☐

1. Consulting	4. Industry, Railroad, Utility
2. Construction	5. State Agency or Department
3. Design/Construct	6. Municipality or County

2. Geographic distribution is important to the survey. If reporting for more than one location, please fill out a form or copy thereof for each.

3. _____

ASCE Prof'l GRADE*	1991 ANNUAL BASE SALARY ($) (not monthly or weekly rate) RANGE ENTRANCE	AVERAGE (1)	MAXIMUM	Number of EMPLOYEES IN GRADE (if none, enter 0)	$ VALUE OF INCENTIVE COMPENSATION in 1991 (Bonuses and/or Profit Sharing)
I/II					
III					
IV					
V					
VI					
VII					
VIII					
IX					

(1) AVERAGE salary of all employees in the indicated ASCE GRADE

4. Does your organization pay overtime to engineers in any ASCE Professional Grade?

Yes ☐ No ☐

PART II, SALARY RELATED BENEFITS

Please check the appropriate box on whether your organization provides each of the listed benefits. Then, please fill in the space that indicates the total non-salary benefits as a percentage of total base salary.

		YES	NO
1.	Vacation	☐	☐
2.	Holidays	☐	☐
3.	Sick Leave	☐	☐
4.	Military Leave and Jury Duty	☐	☐
5.	Retirement Income and Deferred Profit Sharing (ESOP, SRP, TRASOP, 401K, etc.)	☐	☐
6.	Social Security, Unemployment and Workers' Compensation Taxes	☐	☐
7.	Professional Dues, Licenses and Meetings	☐	☐
8.	Insurance -- medical	☐	☐
9.	Insurance -- life, disability	☐	☐
10.	Insurance -- dental, audio/visual	☐	☐
11.	Education Allowance	☐	☐
12.	Separation Allowance	☐	☐
13.	Vehicle, parking allowance	☐	☐
14.	Child Care	☐	☐
15.	Employee Assistance Program (counseling, legal advice) ..	☐	☐

Total Non-Salary Benefits = _____ % of Total Base Salary.

...THANK YOU FOR YOUR COOPERATION...
PLEASE BE SURE TO RETURN THIS QUESTIONNAIRE BEFORE JULY 1, 1991
in the self-addressed envelope provided

APPENDIX 2 - ASCE Professional Grade Descriptions

The purpose of these grade descriptions is to enable employers and employees to ascertain an individual's professional grade. The system can also be a helpful tool for encouraging engineers to improve their ability so as to qualify for higher grades and to facilitate agreement between the employer and the employee regarding each engineer's level of responsibility.

These grade descriptions are compatible with those of the U.S. Department of Labor, Bureau of Labor Statistics (BLS) and of the National Society of Professional Engineers (NSPE). It must be stressed that the grade descriptions are intended to cover the requirements of a wide range of typical engineering organizations but cannot possibly fit all. Many employers may not have the full range of positions listed.

Descriptions should be considered as typical characteristics of a particular grade, rather than as desirable or minimum requirements. For example, it is expected that in many areas of practice, such as research and development, individuals filling middle or higher level positions would routinely have graduate degrees, though this is not indicated. All descriptive matter should be considered when a position is being evaluated. Literal conformance with every item in the descriptions is not necessary when there is a preponderance of evidence that the person measures up to the intended level of competence and responsibility.

Suitable professional recognition and salary scales should be provided for the engineer who selects the technical path for advancement so that he may achieve the same or greater professional and economic status as the engineer who advances along the management path. The grade descriptions include language applicable to both.

Many positions may require an advanced degree. There also may be cases where individuals holding engineering positions have degrees in certain scientific or other closely related fields.

ASCE GRADES/FEDERAL G.S. EQUIVALENTS

ASCE GRADES	FEDERAL G.S.
I/II	5-7
III	9
IV	11
V	12
VI	13
VII	14
VIII	15
IX	16 and above

ASCE PROFESSIONAL

	Engineer I/II	Engineer III	Engineer IV	Engineer V
General Characteristics	This is the entry level for professional work. Performs assignments designed to develop professional work knowledge and abilities requiring application of standard techniques, procedures, and criteria in carrying out a sequence of related engineering tasks. Limited exercise of judgment is required on details of work and in making preliminary selections and adaptations of engineering alternatives.	Independently evaluates, selects, and applies standard engineering techniques, procedures, and criteria, using judgment in making minor adaptations and modifications. Assignments have clear and specified objectives and require the investigation of a limited number of variables. Performance at this level requires developmental experience in a professional position or equivalent graduate level education.	As a fully competent engineer in all conventional aspects of the subject matter of the functional area of the assignments, plans and conducts work requiring judgment in the independent evaluation, selection, and substantial adaptation and modification of standard techniques, procedures, and criteria. Devises new approaches to problems encountered. Requires sufficient professional experience to assure competence as a fully trained worker, or, for positions primarily of a research nature, completion of all requirements for a doctoral degree may be substituted for experience.	Applies intensive and diversified knowledge of engineering principles and practices in broad areas of assignments and related fields. Makes decisions independently on engineering problems and methods, and represents the organization in conferences to resolve important questions and to plan and coordinate work. Requires the use of advanced techniques and the modification and extension of theories, precepts and practices of his field and related sciences and disciplines. The knowledge and expertise required for this level of work usually result from progressive experience.
Direction Received	Supervisor screens assignments for unusual or difficult problems and selects techniques and procedures to be applied on nonroutine work. Receives close supervision on new aspects of assignments.	Receives instructions on specific assignment objectives, complex features, and possible solutions. Assistance is furnished on unusual problems and work is reviewed for application of sound professional judgment.	Independently performs most assignments with instructions as to the general results expected. Receives technical guidance on unusual or complex problems and supervisory approval on proposed plans for projects.	Supervision and guidance relate largely to overall objectives, critical issues, new concepts, and policy matters. Consults with supervisor concerning unusual problems and developments.
Typical Duties & Responsibilities	Using prescribed methods, performs specific and limited portions of a broader assignment of an experienced engineer. Applies standard practices and techniques in specific situations, adjusts and correlates data, recognizes discrepancies in results, and follows operations through a series of related detailed steps or processes.	Performs work which involves conventional types of plans, investigations, surveys, structures, or equipment with relatively few complex features for which there are precedents. Assignments usually include one or more of the following: Equipment design and development, test of materials, preparation of specifications, process study, research investigations, report preparation, and other activities of limited scope requiring knowledge of principles and techniques commonly employed in the specific narrow area of assignments.	Plans, schedules, conducts, or coordinates detailed phases of the engineering work in a part of a major project or in a total project of moderate scope. Performs work which involves conventional engineering practice but may include a variety of complex features such as conflicting design requirements, unsuitability of conventional materials, and difficult coordination requirements. Work requires a broad knowledge of precedents in the specialty area and a good knowledge of principles and practices of related specialties.	One or more of the following: (1) In a supervisory capacity, plans, develops, coordinates, and directs a large and important engineering project or a number of small projects with many complex features. A substantial portion of the work supervised is comparable to that described for engineer IV. (2) As individual researcher or worker, carries out complex or novel assignments requiring the development of new or improved techniques and procedures. Work is expected to result in the development of new or improved techniques and procedures. Work is expected to result in the development of new or refined equipment, materials, processes, products, and/or scientific methods. (3) As staff specialist, develops and evaluates plans and criteria for a variety of projects and activities to be carried out by others. Assesses the feasibility and soundness of proposed engineering evaluation tests, products, or equipment when necessary data are insufficient or confirmation by testing is advisable. Usually performs as a staff advisor and consultant as to a technical specialty, a type of facility or equipment, or a program function.
Responsibility for Direction of Others	May be assisted by a few aides or technicians.	May supervise or coordinate the work of draftsmen, technicians, and others who assist in specific assignments.	May supervise or coordinate the work of engineers, draftsmen, technicians, and others who assist in specific assignments.	Supervises, coordinates, and reviews the work of a small staff of engineers and technicians, estimates manpower needs and schedules and assigns work to meet completion date. Or, as individual researcher or staff specialist may be assisted on projects by other engineers or technicians.
Typical Position Titles	Junior Engineer, Associate, Detail Engineer, Engineer-in-Training, Asst. Research Engineer, Construction Inspector.	Engineer or Assistant Engineer, Project, Plant, Office, Design, Process, Research, Inspector, Engineering Instructor.	Engineer or Assistant Engineer, Resident, Project, Plant, Office, Design, Process, Research, Chief Inspector, Assistant Professor.	Senior or Principal Engineer, Resident, Project, Office, Design, Process, Research, Asst. Division Engineer, Associate Professor, Project Leader.
Education	Bachelor's Degree in engineering from an ABET accredited curriculum, or equivalent, plus appropriate continuing education.			
Registration Status	Certified Engineer-in-Training.		Registered Professional Engineer.	
Typical Professional Attainments	Member of Professional and Technical Societies (Associate Grade or Equivalent).		Member of Professional Society (Member Grade).	
			Member of Technical Society (Associate Grade or Equivalent).	Member of Technical Society (Member Grade). Publishes engineering papers, articles, textbooks, or m

GRADE DESCRIPTIONS

Engineer VI	Engineer VII	Engineer VIII	Engineer IX
Has full technical responsibility for interpreting, organizing, executing, and coordinating assignments. Plans and develops engineering projects concerned with unique or controversial problems which have an important effect on major organization programs. This involves exploration of subject area, definition of scope and selection of problems for investigation, and development of novel concepts and approaches. Maintains liaison with individuals and units within or outside his organization with responsibility for acting independently on technical matters pertaining to his field. Work at this level usually requires extensive progressive experience.	Makes decisions and recommendations that are recognized as authoritative and have an important impact on extensive engineering activities. Initiates and maintains extensive contacts with key engineers and officials of other organizations and companies, requiring skill in persuasion and negotiation of critical issues. At this level individuals will have demonstrated creativity, foresight, and mature engineering judgment in anticipating and solving unprecedented engineering problems, determining program objectives and requirements, organizing programs and projects, and developing standards and guides for diverse engineering activities.	Makes decisions and recommendations that are recognized as authoritative and have a far-reaching impact on extensive engineering and related activities of the company. Negotiates critical and controversial issues with top level engineers and officers of other organizations and companies. Individuals at this level demonstrate a high degree of creativity, foresight, and mature judgment in planning, organizing, and guiding extensive engineering programs and activities of outstanding novelty and importance.	An engineer in this level is either (1) in charge of programs so extensive and complex as to require staff and resources of sizeable magnitude (e.g., research and development, a department of government responsible for extensive engineering programs, or the major component of an organization responsible for the engineering required to meet the objectives of the organization), or (2) is an individual researcher or consultant who is recognized as a national and/or international authority and leader in an area of engineering or scientific interest and investigation.
Supervision received is essentially administrative with assignments given in terms of broad general objectives and limits.	Supervision received is essentially administrative with assignments given in terms of broad general objectives and limits.	Receives general administrative direction.	
One or more of the following: (1) In a supervisory capacity (a) plans, develops, coordinates, and directs a number of large and important projects or a project of major scope and importance, or (b) is responsible for the entire engineering program of an organization when the program is of limited complexity and scope. The extent of his responsibilities generally require a few (3 to 5) subordinate supervisors or team leaders with at least one in a position comparable to level V. (2) As individual researcher or worker conceives, plans, and conducts research in problem areas of considerable scope and complexity. The problems must be approached through a series of complete and conceptually related studies, are difficult to define, require unconventional or novel approaches, and require sophisticated research techniques. Available guides and precedents contain critical gaps, are only partially related to the problem, or may be largely lacking due to the novel character of the project. At this level, the individual researcher generally will have contributed inventions, new designs, or techniques which are of material significance in the solution of important problems. (3) As a staff specialist serves as the technical specialist for the organization (division or company) in the application of advanced theories, concepts, principles, and processes for an assigned area of responsibility (i.e., subject matter, function, type of facility or equipment, or product). Keeps abreast of new scientific methods and developments affecting his organization for the purpose of recommending changes in emphasis of programs or new programs warranted by such developments.	One or both of the following: (1) In a supervisory capacity is responsible for (a) an important segment of the engineering program of a organization with extensive and diversified engineering requirements, or (b) the entire engineering program of an organization when it is more limited in scope. The overall engineering program contains critical problems the solution of which requires major technological advances and opens the way for extensive related development. The extent of his responsibilities generally requires several subordinate organizational segments or teams. Recommends facilities, personnel, and funds required to carry out programs which are directly related with and directed toward fulfillment of overall organization objectives. (2) As individual researcher and consultant is a recognized leader and authority in his organization in a broad area of specialization or in a narrow but intensely specialized field. Selects research problems to further the organization's objectives. Conceives and plans investigations of broad areas of considerable novelty and importance for which engineering precedents are lacking in areas critical to the overall engineering program. Is consulted extensively by associates and others with a high degree of reliance placed on his scientific interpretations and advice. Typically, will have contributed inventions, new designs, or techniques which are regarded as major advances in the field.	One or both of the following: (1) In a supervisory capacity is responsible for (a) an important segment of a very extensive and diversified highly engineering program, or, (b) the entire engineering program when the program is of moderate scope. The programs are of such complexity that they are of critical importance to overall objectives, include problems of extraordinary difficulty that often have resisted solution, and consist of several segments requiring subordinate supervisors. Is responsible for deciding the kind and extent of engineering and related programs needed for accomplishing the objectives of the organization, for choosing the scientific approaches, for planning and organizing facilities and programs, and for interpreting results. (2) As individual researcher and consultant, formulates and guides the attack on problems of exceptional difficulty and marked importance to the organization or industry. Problems are characterized by their lack of scientific precedents and source material, or lack of success of prior research and analysis so that their solution would represent an advance of great significance and importance. Performs advisory and consulting work for the organization as a recognized authority for broad program areas or in an intensely specialized area of considerable novelty and importance.	
Plans, organizes, and supervises the work of a staff of engineers and technicians. Evaluates progress of the staff and results obtained, and recommends major changes to achieve overall objectives. Or, as individual research or staff specialist may be assisted on individual projects by other engineers or technicians.	Directs several subordinate supervisors or team leaders, some of whom are in positions comparable to Engineer VI, or, as individual researcher and consultant, may be assisted on individual projects by other engineers and technicians.	Supervises several subordinate supervisors or team leaders, some of whose positions are comparable to Engineer VII, or individual researchers some of whose positions are comparable to Engineer VII and sometimes Engineer VIII. As an individual researcher and consultant may be assisted on individual projects by other engineers or technicians.	
Senior or Principal Engineer, Division or District Engineer, Production Engineer, Assistant Division, District or Chief Engineer, Consultant, Professor, City or County Engineer	Principal Engineer, Division or District Engineer, Department Manager, Director or Assistant Director of Research, Consultant, Professor, Distinguished Professor or Department Head, Assistant Chief or Chief Engineer, City or County Engineer	Chief Engineer, Bureau Engineer, Director of Research, Department Head or Dean, County Engineer, City Engineer, Director of Public Works, Senior Fellow, Senior Staff, Senior Advisor, Senior Consultant, Engineering Manager	Director of Engineering, General Manager, Vice President, President, Partner, Dean, Director of Public Works

makes presentations, gives lectures, provides training, etc.

APPENDIX 3
ASCE Salary Index

LATEST ASCE SALARY INDEX IS RELEASED

ASCE has been publishing its salary index in CIVIL ENGINEERING since 1957. The sole purpose of the index is to show salary trends; it does not represent a recommended salary scale, nor is it intended as a precise measure of salary changes.

Index figures are adjusted annually on the basis of a survey mailed twice each year. The formula uses the total of average entrance rates for grades I/II and III, plus a factor to arrive at the index. Thus, (grade I/II+grade III) $\times 1.5 \div 15{,}930$ creates the index figure.

For example, Atlanta would be calculated as $(27{,}857+34{,}900) \times 1.5 \div 15{,}930 = 5.91$. The salary trend change is the comparison of the June 1991 index with the index (5.82) for December 1990; i.e., $\Delta = 0.09$.

The average of entrance salaries reported on questionnaires are included because of the many inquiries about salary data used in these calculations. These figures indicate entrance salary levels for the lower grades (generally considered preprofessional engineer level) in the locations surveyed. These are not to be taken as recommended salary scales.

The latest survey, published here, was done for the six-month period that ended June 30.

ENGINEERING SALARY INDEX AS OF JUNE 1991

City	Average Salary (ASCE Grades) I/II	III	June '91	Dec. '90	June '86
CONSULTING FIRMS					
Atlanta	27,857	34,900	5.91	5.82	**
Baltimore	27,036	31,818	5.54	5.70	4.39
Boston	28,314	35,041	5.97	5.80	5.04
Chicago	29,298	38,091	6.35	6.35	5.11
Dallas/Fort Worth	26,501	30,937	5.41	5.27	**
Denver	25,204	33,105	5.49	5.43	4.40
Houston	28,693	35,838	6.08	5.54	5.44
Kansas City, Mo.	26,770	33,830	5.71	5.86	3.99
Los Angeles	29,845	39,991	6.58	6.82	4.85
Miami	26,179	30,050	5.29	5.47	4.54
New Orleans	25,991	31,648	5.43	5.35	5.40
New York	29,084	36,781	6.20	5.99	4.09
Philadelphia	27,217	33,212	5.69	5.91	**
Phoenix	28,823	35,714	6.08	6.25	**
Pittsburgh	25,167	32,473	5.43	5.53	4.58
Portland, Ore.	29,924	35,048	6.12	*	4.98
St. Louis	26,151	33,297	5.60	5.92	**
San Francisco	32,419	39,981	6.82	6.40	5.12
Seattle	29,232	34,248	5.98	6.04	4.90
Virginia Beach, Va.	24,667	28,672	5.02	4.85	**
Washington, D.C.	27,674	34,225	5.83	5.86	**
* Not reported in 1990.					
** Not surveyed in 1986.					
HIGHWAY DEPARTMENTS					
Region					
I New England	26,331	28,552	5.17	5.17	4.17
II Mid-Atlantic	26,268	31,250	5.42	5.35	4.47
III Mid-West	27,440	31,255	5.53	5.51	4.38
IV South	24,596	31,098	5.24	5.37	4.17
V West	24,847	29,515	5.12	4.99	4.35
VI Far West	25,843	30,553	5.31	5.42	4.66
FEDERAL CIVIL SERVICE					
	24,699	33,430	5.47	5.19	4.17

THE ASCE SALARY INDEX IS PREPARED SEMIANNUALLY.